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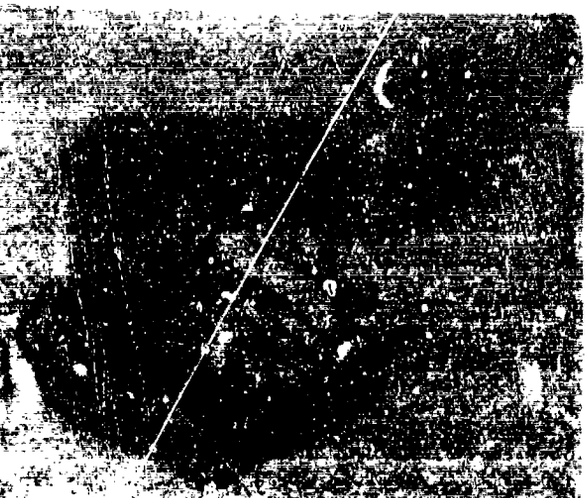
EVALUATION OF SAFE EXPOSURE GUIDELINES FOR MODERATE AND HIGH INTENSITY CONTINUOUS NOISE

DAYTON UNIVERSITY, OHIO

NOVEMBER 1976



EVALUATION OF SAFE EXPOSURE CRITERIA FOR MODERATE AND HIGH INTENSITY CLOTHED HEAT

UNIVERSITY OF DAYTON
RESEARCH INSTITUTE
DAYTON, OHIO 45469

NOVEMBER 1976

AEROSPACE MEDICAL RESEARCH LABORATORY
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In a recent report (Environmental Protection Agency, 1974), the EPA made predictions, based upon extrapolations from the literature, as to what constitutes a 5 dB equal 90th percentile TTS_2 curve, i.e., a "safe exposure" curve. However, because of a dearth of data for brief noise exposures, they were uncertain as to the accuracy of some of their predictions. Therefore, in the present investigation, the TTS_2 consequences of brief noise exposures were

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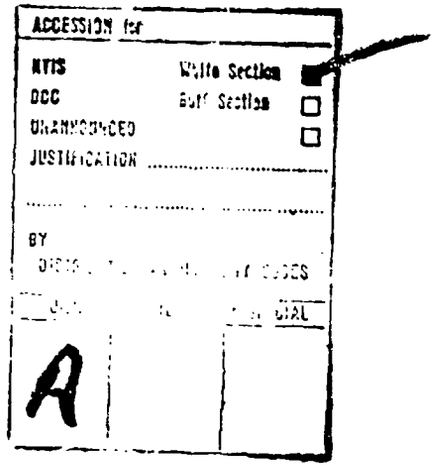
systematically evaluated. Specifically, forty subjects were tested at each of 10 appropriately spaced noise exposure levels. The 90th percentile TTS_2 at 4000 Hz was determined for each exposure level and then a multiple regression equation was fitted to these values. From this equation, a 5 dB equal 90th percentile TTS_2 curve was calculated, which represents our predictions as to the trade-offs between noise intensity and exposure duration necessary to produce 90th percentile TTS_2s of 5 dB. A comparison of our predictions to those of the EPA (in the area of uncertainty) suggests that the conservative EPA predictions may be too conservative while the EPA's modified and extended CHABA criterion predictions may not be sufficiently conservative. Although our predictions reflect the trends which were actually observed in the present investigation, it would be unreasonable to assume that our predictions are more than "ball park" estimates of reality. They do suggest, though, that in reality a 5 dB equal 90th percentile TTS_2 curve would probably be intermediate between the conservative EPA curve and EPA's modified and extended CHABA criterion curves.

PREFACE

The research reported in this technical report was accomplished under Contract F33615-75-C-5055 with the University of Dayton Research Institute. Because of the dearth of data associated with short duration noise exposures, the present investigation was initiated to systematically assess the temporary threshold shift consequences of brief, moderate and high intensity, noise exposure. The findings from this investigation provide a reasonable basis for evaluating the Environmental Protection Agency's estimates as to what constitutes safe exposures to moderate and high intensity continuous noise.



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SECTION 1
INTRODUCTION

Existing noise exposure regulations were designed to minimize the noise-induced permanent threshold shift (NIPTS) that a worker can be expected to exhibit after many years of daily occupational noise exposure, rather than to protect the worker from any NIPTS whatsoever. For example, the current OSHA (Occupational Safety & Health Administration) noise exposure regulation limits the daily noise exposure to 90 dBA. It has been estimated, by the Passchier-Vermeer (1968) method, that a 90 dBA daily exposure will, after 40 years, result in an average NIPTS at 4000 Hz (which is generally considered to be the most sensitive frequency) of about 13 dB and a 90th percentile NIPTS of nearly 24 dB (Johnson, 1973; p. 22). If these estimates are accurate, it is apparent that the NIPTS consequences of a 90-dBA daily exposure limitation will not be trivial.

But what would constitute a trivial NIPTS? According to a recent EPA report (Environmental Protection Agency, 1974), any NIPTS of less than 5 dB at 4000 Hz can be considered trivial, since a threshold shift of that magnitude would have no practical consequences on hearing acuity. Furthermore, the EPA predicted that an 8-hour daily exposure at 73 dBA would (as would any briefer exposure with an equal total energy), after 40 years, produce a 96th percentile NIPTS of only 5 dB. Thus, a daily exposure limitation of 73 dBA would adequately protect the general population from any adverse consequences of noise, since virtually the entire population would be protected from NIPTSs in excess of 5 dB.

Individuals encounter many other noise exposures that are not likely to be repeated day after day, year after year, although they are also potentially hazardous. But how can the hazard-potential of such isolated noise exposures be estimated? The temporary threshold shift measured two minutes after noise termination (TTS_2) is useful in this regard. In fact, the TTS_2 resulting

from an isolated exposure is thought to approximate the NIPTS that would be evident after 10 to 20 years of daily noise exposure at the same sound energy level. But the TTS_2-NIPTS relationship is not necessary to the estimation of hazard-potential, since the TTS_2 itself provides an estimate of relative hazard-potential. Thus, if one exposure produces a higher TTS_2 than another, the former exposure is potentially more hazardous than the latter; since the probability of complete recovery to the base-line hearing threshold level (HTL) diminishes at TTS_2 increases.

Any isolated noise exposure that would produce a TTS_2 of only 5 dB can reasonably be considered a "safe exposure," since recovery from such a nominal TTS_2 would undoubtedly be complete. Furthermore, even though that exposure was repeated on a daily basis, its anticipated long-term consequence would be a NIPTS of only 5 dB, and, as mentioned previously, can be considered trivial. In the EPA (1974) report, it was also estimated that an 8-hour exposure at 73 dBA would, as would any briefer exposure with an equal total energy, produce a 90th percentile TTS_2 at 4000 Hz of 5 dB. Thus, using a base-line exposure of 8 hours at 73 dBA, the EPA suggested that a 5 dB equal 90th percentile TTS_2 curve can be described by means of the equal energy rule (halving of the exposure duration for each 3 dB increase in noise intensity). This curve, then, could be considered a "safe exposure" curve since it reflects the noise intensity-exposure duration combinations that, if not exceeded, can be expected to produce trivial TTS_2s, i.e., TTS_2s which will rarely exceed 5 dB.

The EPA is confident that the TTS_2 predictions, based upon the equal energy rule, will be reasonably accurate for exposure durations of 8 hours down to about 30 minutes. For briefer exposures, though, the equal energy predictions will be too conservative; i.e., for each halving of duration, the intensity should be increased by something more than 3 dB. Accordingly, to predict TTS_2 within the area of uncertainty, the EPA suggested that for durations of less than 15 minutes, a 6 dB halving rule might be more appropriate than equal energy. As another possible solution, the EPA extrapolated

the National Academy of Science, National Research Council Committee on Hearing, Bioacoustics, and Biomechanics (CHABA) criterion (Kryter, Ward, Miller & Eldredge, 1966) down to a 90th percentile TTS_2 of 5 dB and extended that criterion down to very brief exposure durations.

This uncertainty concerning the trade-offs between noise intensity and brief exposure duration results from researchers not having systematically investigated the TTS_2 consequences of brief (less than 15 minutes) noise exposures. But since individuals in the real world may be subjected to other than relatively long exposures, it is equally important that the "safe exposure" guideline (that is, the 5 dB equal 90th percentile TTS_2 curve) be accurate for brief exposures.

The present investigation was designed to provide a factual basis for evaluating the EPA (1974) safe exposure guideline in the area of uncertainty. Accordingly, in this investigation, the TTS_2 consequences of brief noise exposures (ranging in duration from 1 to 1000 seconds and intensity from 92 to 130 dBA) were systematically evaluated. Ten exposure levels, which were anticipated to produce 90th percentile TTS_2 in the neighborhood of 5 dB, were selected for evaluation. Forty individuals were then tested at each exposure level.

SECTION 2
METHODS

A. PROCEDURES

When a subject reported to the laboratory, he was seated in a quiet area for 1 hour before the actual testing session. During this period, he was required to wear sound-deadening earmuffs, which functioned to sensitize his hearing. On the first occasion the subject was in the laboratory, he was required to read a set of standard instructions which explained the basic nature of the task (see Appendix A). At the conclusion of the quiet period, the subject was seated in the audiometric testing chamber. The experimenter briefly reviewed the subject's instructions and answered any questions that might be posed. The subject then put on earphones and was given a practice audiometric test, which was immediately followed by a preexposure audiometric test.

Approximately 60 seconds after the preexposure tests, the subject was presented (binaurally, through the earphones) with pink noise. One minute after the noise terminated, the subject was given a postexposure audiometric test. While still in the chamber, he completed four brief noise rating scales (see Appendix B) and, at 27 minutes after the noise had terminated, the subject was given another postexposure audiometric test.

When the subject was in the testing chamber, two-way communications between the experimenter and the subject were always possible by means of an intercommunication system. This system was used primarily to inform the subject what event would occur next. For instance, at 15 seconds before noise exposure commenced, the subject was informed that noise exposure would commence in 15 seconds. Then, beginning at 5 seconds before noise exposure commenced, the experimenter provided a second-by-second countdown to noise (viz., "five, four, three, two, one, noise"). Secondarily

the communication system was used to provide the subject with a means of informing the experimenter that the equipment had malfunctioned or simply that he wanted to leave the testing chamber (which he was free to do at any time he desired). Although the equipment occasionally malfunctioned, it was quickly repaired; none of the subjects expressed a desire to (or actually left) the testing chamber during a testing session.

B. AUDIOMETRIC TESTS

Audiometric tests were given [i.e., hearing threshold level (HTL) determinations were made] with a Tracor ARJ-4 Bekesey-type, self-recording, audiometer. For the practice test, which was intended as a "warm-up" exercise, the subject was tested in the right ear at frequencies of 0.5, 1, 2, 3, 4 and 6 KHz. For the preexposure tests, he was given a full audiometric test, at frequencies of 0.5, 1, 2, 3, 4 and 6 KHz in both ears, starting with the left ear. For the first postexposure test, he was given a test at frequencies of 3 and 4 KHz in both ears, starting with the left ear. For the second postexposure test, he was given the full audiometric test, starting with the left ear. In these audiometric tests, tones were presented to the subject via TDH-39 earphones mounted in MX-41/AR cushions, the same presentation arrangement used for presenting pink noise.

During the several months required for testing the subjects, the audiometer was calibrated, at intervals of approximately 1 month, in accordance with the American National Standards Institute (ANSI) American National Standard Specification for Audiometers, S 3.6(1969). The audiometer's output was measured with a Bruel and Kjaer (B&K) model 2203 sound level meter with a B&K model 1616 1/3 octave band filter attached to a B&K model 4152 artificial ear that incorporated a B&K model 4144 microphone. On each occasion that the audiometer was calibrated, the noise generator, which produced the pink noise used for noise exposures, was also calibrated. Measurement of the noise generator's output was accomplished with the same B&K

instrumentation that was used to measure the audiometer's output. Before and during each noise exposure, the sound pressure level (SPL) output of the noise generator was monitored by means of a Hewlett-Packard volt meter to insure that the subject received the appropriate noise exposure intensity. In Table 1, third octave band sound pressure levels are shown for representative intensities of pink noise.

The testing chamber used in this investigation conforms to the applicable ANSI standard for background noise in audiometric rooms. The door of the chamber could not be locked and could easily be opened from within.

C. NOISE EXPOSURE LEVELS

Ten different noise exposure levels (combinations of noise intensity and exposure duration) were used in this investigation. The exposure levels were selected in an attempt to produce 90th percentile TTS_2s at 4000 Hz in the neighborhood of 5 dB. Since there was little factual data to suggest what exposure levels might produce 90th percentile TTS_2s in this range, we used a three-stage experimental design. In the first stage, two exposure levels were more or less arbitrarily selected. Then, the observed 90th percentile TTS_2s at that stage, along with a liberal amount of intuition, were used in selecting exposure levels for the second stage, and so on for the third stage. The three stages were:

Stage 1. Forty subjects were exposed to pink noise at intensities of 92 and 115 dBA for 160 seconds. The same subjects were tested at both exposure levels, with random presentation order.

Stage 2. Forty subjects were exposed to pink noise at an intensity of 92 dBA for 40 and 1000 seconds. The subjects were tested at both exposure levels, with random presentation order.

Stage 3. In the final stage, 40 subjects were tested at each of six exposure levels. These testing sessions were sequenced (rather than a random presentat on) as follows: 120 dBA at 10 and 40 seconds, 125 dBA at 1 and 10

TABLE 1

OUTPUT OF TDH-39 EARPHONES MOUNTED IN MX-41/AR CUSHIONS, WITH PINK NOISE INPUT

FREQUENCY (Hz)	Overall "A" Weighted Level (dBA)					
	92 dBA	100 dBA	110 dBA	115 dBA	120 dBA	130 dBA
	1/3 Octave, Sound Pressure Level (SPL)					
	SPL	SPL	SPL	SPL	SPL	SPL
125	78.5	86.0	97.0	102.0	105.5	116.0
160	79.0	87.0	98.0	102.0	106.0	116.0
200	80.0	87.5	98.0	103.0	108.0	117.0
250	80.0	87.5	98.0	103.0	107.5	117.0
315	79.0	87.5	98.0	103.0	107.0	118.0
400	79.0	87.5	98.0	103.5	107.0	117.0
500	79.5	87.5	97.5	103.0	107.5	117.0
630	80.0	87.5	98.0	103.0	108.0	117.0
800	80.0	87.5	98.0	103.0	107.0	117.0
1000	79.5	87.0	97.5	102.5	107.0	117.0
1250	79.0	87.0	97.5	102.5	107.0	116.5
1600	79.0	87.0	97.5	102.0	106.0	116.5
2000	80.0	87.0	98.0	103.0	107.0	117.0
2500	82.0	90.0	101.0	106.0	110.0	119.0
3150	82.0	90.0	100.5	106.0	110.0	120.0
4000	80.0	88.0	99.0	104.0	109.0	118.0
5000	82.0	91.0	101.0	105.0	110.0	120.0
6300	82.0	79.5	90.0	96.0	100.0	110.0
8000	66.0	73.0	84.0	88.5	94.0	103.5

seconds, and 130 dBA at 1 and 10 seconds. This sequential presentation acted as a safeguard for the subjects since, if a subject had exhibited an excessive threshold shift at a given exposure level (none did), he would then have been eliminated from further noise exposures.

D. SUBJECTS

Subjects were recruited from the University of Dayton student population. To be eligible for participation, it was necessary to have HTLs of better than +20 dB in both ears in the 0.5 to 6 KHz frequency range (as determined by audiometric screening), no apparent auditory defects, and no history of unusual noise exposure. Subjects were paid for their participation at the standard University hourly rate.

A total of 94 subjects participated in this investigation of whom 23 were females and 71 were males. They ranged in age from 18 to 26 with a median age of 20 years. While some of the 94 subjects participated in only a single stage of the investigation, others participated in multiple stages. To be specific, 17 subjects participated only in stage 1, 22 only in stage 2, 31 only in stage 3, 15 in both stage 1 and 2, 6 in stage 1 and 3, 1 in stage 2 and 3, and 2 subjects participated in all three stages.

E. AUDIOMETRIC VARIABLES

The self-recording audiometer produced an audiogram in which the HTLs (which could range from -10 to 90 dB) were represented by a continuous "inked" tracing. To insure consistency, a single individual "read and recorded" the HTLs (to the nearest 1 dB) from the audiograms for all 400 noise exposures (40 subjects at each of 10 exposure levels).

For each noise exposure, 34 HTLs were determined, viz., six practice tests HTLs (right ear at 0.5, 1, 2, 3, 4 and 6 KHz), twelve preexposure tests HTLs (both ears, at the 6 frequencies), four HTLs from the first post-exposure test (both ears, at 3 and 4 KHz), and twelve HTLs from the second

postexposure test (both ears, at the 6 frequencies). In Appendix C, the 34 HTLs are shown for each of the 400 noise exposures, organized by subject.

From the 34 HTLs, 36 audiometric variables were calculated, viz., four TTS_2s (first postexposure HTL minus preexposure HTL, for both ears, at 3 and 4 KHz), twelve TTS_{30}s (second postexposure HTL minus preexposure HTL, both ears, at the 6 frequencies), two combined TTS_2s (average of left and right TTS_2s, at 3 and 4 KHz), six combined TTS_{30}s (average of left and right TTS_{30}s, at the 6 frequencies), six combined HTLs (average of left and right preexposure HTL, at the 6 frequencies), and six differential HTLS (preexposure HTL minus practice test HTL, right ear, at the 6 frequencies).

F. NOISE RATING SCALES

On the postexposure questionnaire, the subject indicated his subjective impression of the noise exposure by making ratings on four noise rating scales. These scales were: loudness, acceptability, pleasantness, and concentration (Appendix B).

Loudness was rated on a 9-point scale. For data analysis purposes, the 9 alternatives were later assigned integer values of 1 to 9. Acceptability was rated on a 3-point scale. The first alternative was later assigned a value of one, the second--a value of three, and the third--a value of two.

For the pleasantness scale, the subject simply indicated that point on a continuum which represented the relative pleasantness of the noise exposures, which was later assigned a value of 1 to 100. Concentration was rated on a 5-point scale, the alternatives of which were later assigned values of 1 to 5.

SECTION 3
RESULTS

A. COMBINED TTS_2 AT 4000 HZ

Our main interest concerned the TTS_2 at 4000 Hz. To determine whether reliable threshold shifts had occurred, the combined TTS_2 at 4000 Hz was tested at each of the 10 exposure levels. In each test, a one-tailed t-test was used to determine whether the observed shift was significantly greater than zero dB. These analyses are summarized in Table 2.

Table 2 shows that all of the noise exposures (except the 92 dBA, 40-second exposure) did produce threshold shifts that were significantly ($p \leq .05$) greater than zero dB. Further, it appears from Table 2 that the combined TTS_2 varied systematically with variations in noise intensity and exposure duration. But just how systematic are these variations?

Predicting Combined TTS_2 at 4000 Hz

A multiple regression analysis was performed in which TTS_2 was treated as the dependent variable and noise intensity (dBA), exposure duration (minutes), and noise intensity x exposure duration were treated as the independent variables (as they were in subsequent multiple regression analyses). For purposes of this analysis, there were 400 observations (40 observations at each of 10 exposure levels). The multiple correlation coefficient, $R = 0.4544$, was statistically significant ($p \leq .05$).[1] The squared multiple correlation coefficient, R^2, indicates the proportion of the variation in the dependent variable (in this case, combined TTS_2) which can be accounted for by variation in the independent variables. Thus, approximately 21 percent ($R^2 = 0.2065$ of the variation in TTS_2 could be accounted for by variations in the independent variables (that is, intensity, exposure duration, and intensity x exposure duration).

[1] Critical value of R, at the .05 level, is 0.139.

TABLE 2

COMBINED TTS_2 AT 4000 HZ, SUMMARY OF T TESTS

Exposure Level		TTS_2 (Average)	Standard Deviation	t(One-Tailed)
dBA	Seconds			
92	40	0.54	2.97	1.15
92	160	1.71	3.15	3.44*
92	1000	2.80	3.97	4.46*
115	160	7.53	6.54	7.28*
120	10	0.78	2.97	1.66*
120	40	2.79	4.91	3.59*
125	1	0.98	2.77	2.23*
125	10	1.41	2.46	3.62*
130	1	1.28	2.33	3.46*
130	10	1.44	3.78	2.41*

*Statistically significant, $p \leq .05$.

The resulting multiple regression equation,

$$TTS_2^* = 0.085708389 + 0.0I - 9.35689093\,T + 0.10304257\,IxT$$

where,

TTS_2^* = predicted combined TTS_2

I = intensity (dBA)

T = exposure duration (minutes)

permits one to predict the combined TTS_2 which would result from a given noise intensity and exposure duration. In essence, this equation predicts the average TTS_2 which could be expected for a given combination of intensity and exposure duration; it is unable to account for the individual variability in TTS_2 which would occur at a given exposure level.

Since our interest was in group response to noise exposure, rather than individual response, another multiple regression analysis was performed to determine whether TTS_2 varied more systematically with exposure level if

the individual variability in TTS_2 at a given exposure level was eliminated. Therefore, in this analysis, average TTS_2 was treated as the dependent variable. Thus, there were a total of 10 average TTS_2 observations (one for each exposure level). The multiple R(0.9877) was significant ($p \leq .05$).[2] Although the multiple R and, accordingly, the R^2, are in all likelihood inflated as a consequence of the small number of observations (n = 10), the magnitude of the R^2 (0.9756) indicates that a large portion of the variation in average TTS_2 could be accounted for by variations in the independent variables. In other words, group response to noise exposure, not too surprisingly, is much more predictable than individual response. Obviously, the multiple regression equation associated with this analysis was identical to that from the previous equation since, in effect, they are both "least square best fit" approximations to the average TTS_2s associated with the various exposure levels.

This equation was used to retrospectively predict the combined TTS_2s at 4000 Hz which should have been produced by the combinations of noise intensity and exposure duration actually employed. Both the predicted and actual average TTS_2s are shown in Table 3. Comparing these values should provide the reader with some notion as to the predictive accuracy of the equation, and it is apparent that the predicted TTS_2s do bear considerable similarity to the actual TTS_2s.

But in producing a given TTS_2, what are the "trade-offs" between noise intensity and exposure duration? To answer this question, the regression equation was used to calculate a 2 dB equal TTS_2 curve. This was accomplished by letting the predicted TTS_2 equal 2 dB while intensity varied from 92 to 130 dBA. Then, the equation was simply solved for the exposure durations which would satisfy the relationship. The TTS_2 of 2 dB was chosen since this value was reasonably close to the overall average TTS_2, 2.1 dB, for all 400 observations. The curve is shown in Figure 1.

---

[2] Critical value of R, at the .05 level, is 0.839.

TABLE 3

COMBINED TTS_2 AT 4000 HZ, ACTUAL VERSUS PREDICTED TTS_2

Exposure Level		Average TTS_2	
dBA	Seconds	Actual	Predicted
92	40	.54	.94
92	160	1.71	1.19
92	1000	2.80	2.91
115	160	7.53	7.51
120	10	.78	1.36
120	40	2.79	2.86
125	1	.98	.92
125	10	1.41	1.44
130	1	1.28	.92
130	10	1.44	1.53

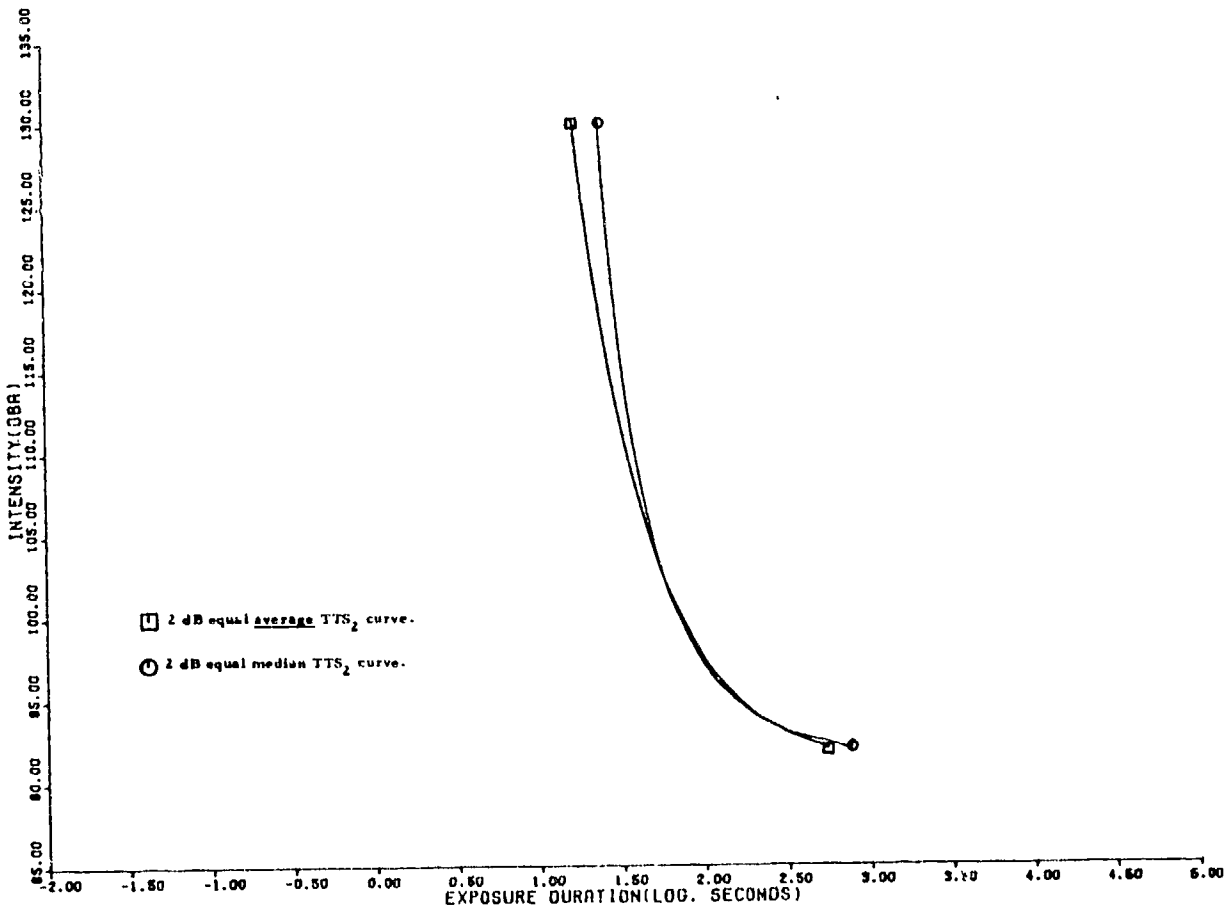

Figure 1. Two dB Equal Average and Median TTS_2 Curves.

The 50th and 90th percentile TTS_2s, for each of the 10 exposure levels, are shown in Table 4. It has often been debated whether the average or the median (50th percentile) TTS_2 is a better indicator of the effect of noise exposure. Therefore, a multiple regression analysis was performed in which the median TTS_2 was created as the dependent variable. In this analysis there were 10 observations--one observation at each exposure level. The multiple R (0.9816) was statistically significant ($p \leq .05$).[2] Using the resulting multiple regression equation,

$$\text{median } TTS_2 = 2.89255786 - 0.01975274\,I - 9.70307309\,T + 0.10627221\,I \times T$$

a 2 dB equal median TTS_2 curve was calculated. This curve is also shown in Figure 1.

TABLE 4

COMBINED TTS_2 AT 4000 HZ, MEDIAN AND 90th PERCENTILE

Exposure Level		Median TTS_2	90th Percentile TTS_2
dBA	Seconds		
92	40	1.18	2.28
92	160	1.31	5.26
92	1000	2.24	7.21
115	160	7.59	13.82
120	10	0.92	3.88
120	40	1.40	7.40
125	1	0.43	3.54
125	10	1.22	4.28
130	1	0.97	4.49
130	10	0.75	4.98

The two curves in Figure 1 reflect the trends which the average and median TTS_2 data (associated with the 10 exposure levels) actualy exhibited. Figure 1 shows that the tradeoffs between noise intensity and exposure

duration necessary to produce TTS_2s of 2 dB are nonlinear. In fact, the exposure duration necessary to produce equal TTS_2s (either average or median) decreases asymptotically with increases in noise intensity, even though exposure durations are plotted in $\log_{10}$ seconds. Furthermore, with decreases in noise intensity, exposure duration must increase at an increasing rate in order to produce equal TTS_2s.

The shapes of the two curves are quite similar, indicating that the intensity-exposure duration tradeoffs are quite similar for the median and average TTS_2. The "average" curve is slightly lower than the "median" curve, which indicates that for a given combination of noise intensity and exposure duration, the averate TTS_2 would be somewhat higher than the median TTS_2.

Predicting Combined 90th Percentile TTS_2 at 4000 Hz

Our primary concern was not in predicting average or median TTS_2s. Instead, it was in predicting 90th percentile TTS_2s. Accordingly, a multiple regression analysis was performed in which the 90th pecentile TTS_2 was treated as the dependent variable. In this analysis, there were 10 observations, one at each of the 10 exposure levels. The multiple regression coefficient, $R = 0.9819$, was statistically significant ($p \leq .05$).[2] The regression equation, from this analysis, is shown below:

$$\text{90th percentile } TTS_2^* = 3.05691404 + 0.00604811\,I - 14.21012926\,T + 0.15692443\,I{\times}T\,.$$

Using this equation, both 5 dB and a 10 dB equal 90th percentile TTS_2 curve were calculated. Considering the limitations associated with regression equations (which will be discussed later), the 5 dB curve can be expected to be more reasonable in its match to reality than the 10 dB curve, since the average 90th percentile TTS_2 observed was reasonably close to 5 dB (actually 5.8 dB). Both curves are shown plotted in Figure 2, which shows that the tradeoffs necessary to produce equal 90th percentile TTS_2s are not linear. Furthermore, the exposure duration necessary to produce a given 90th percentile TTS_2 decreases

asymptotically with increases in noise intensity (the limiting value of which, for the 5 dB curve, appears to be about 10 seconds), while the exposure duration must increase at an increasing rate with decreases in noise intensity. Considering the distance separating the two curves, for a given noise intensity, it is necessary to increase exposure duration considerably to increase the 90th percentile TTS_2 from 5 dB to 10 dB.

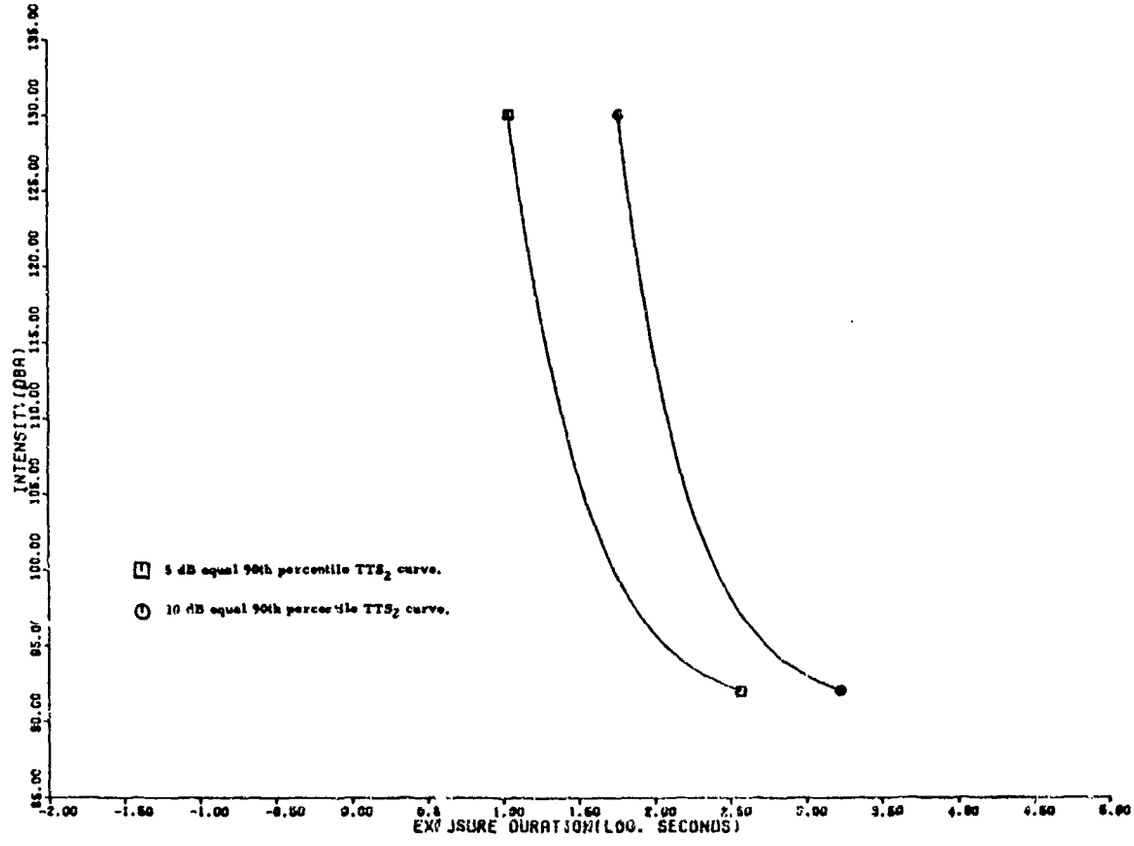

Figure 2. Equal 90th Percentile TTS_2 Curves: 5 Versus 10 dB.

Comparative Evaluation of 4000 Hz Equals 90th Percentile TTS_2 Curve

In a recent report, the EPA (1974; Appendix C) predicted that a noise exposure with energy equivalent to an 8-hour exposure of 73 dBA would produce a 90th percentile TTS_2 equal to that produced by an 8-hour exposure at 73 dBA, which is estimated to be approximately 5 dB. Thus, they suggested

that a 5 dB equal 90th percentile TTS_2 curve could be described by means of the equal energy rule (halving the exposure duration for each 3 dB increase in intensity), in which the reference point is an 8-hour exposure at 72 dBA. The EPA recognized that the equal energy rule is too conservative for relatively brief exposures; however, they were uncertain as to how the tradeoffs (between intensity and exposure duration) might best be described for brief exposures. As one approximation, the EPA suggested that for exposures of less than 15 minutes, a 6 dB halving rule might be more appropriate than equal energy in defining the tradeoffs. As another approximation, the EPA extrapolated from and extended the CHABA criterion (Kryter et al., 1966). Based upon actual data, the CHABA criterion defines the intensity-exposure duration tradeoffs which can be expected to produce 90th percentile TTS_2 of 20 dB for exposure durations down to about $1\frac{1}{2}$ minutes. Assuming that for every 1 dB decrease in intensity there will be a corresponding decrease in TTS_2 of 1 dB, the EPA extrapolated the CHABA criterion down to 5 dB and then extended it (by the method of "best guess") to include durations of less than $1\frac{1}{2}$ minutes.

Figure 3 was redrawn from the EPA (1974) document to clarify what we mean by the EPA's conservative and extended CHABA criterion TTS_2 curves. The lower straight line, in Figure 3, is what we have termed EPA's conservative TTS_2 curve while the "S"-shaped curve delineated with "circles" (and, where there are two curves delineated with circles, the higher of the two curves) is what we have termed EPA's extended CHABA criterion TTS_2 curve. Unfortunately, what we have termed EPA's modified TTS_2 curve was not graphically depicted in the EPA (1974) document.

In Figure 4, our predicted 5 dB equal 90th percentile TTS_2 curve is plotted in relationship to the EPA's conservative (equal energy rule throughout), modified (6 dB halving rule, for exposures of less than 15 minutes), and extended CHABA criterion (5 dB equal 90th percentile) TTS_2 curves. Figure 4 shows that the curves are plotted within intensities ranging from 92 to 130 dBA, which was the range considered in the present investigation.

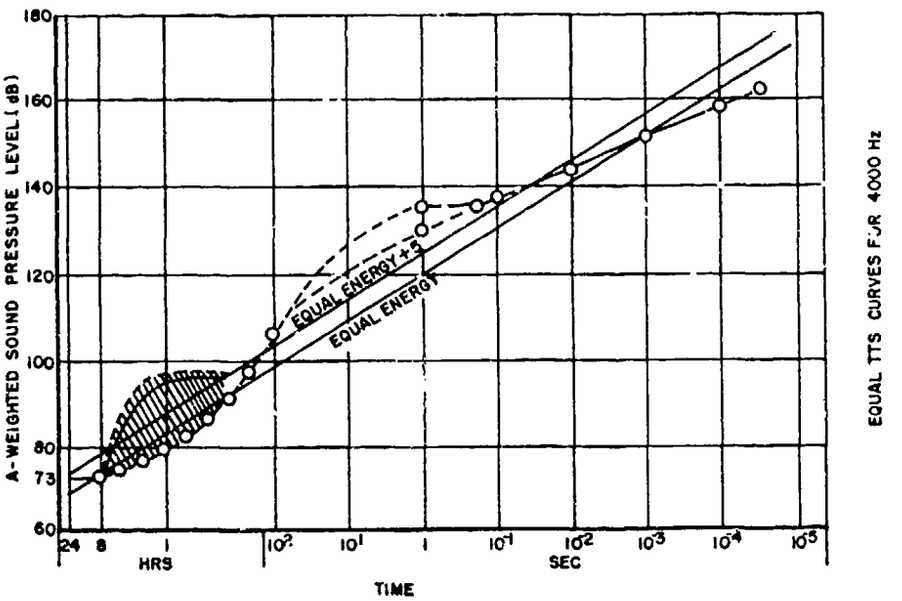

Figure 3. Equal TTS Curves at 4000 Hz, from EPA (1974; p. C-12).

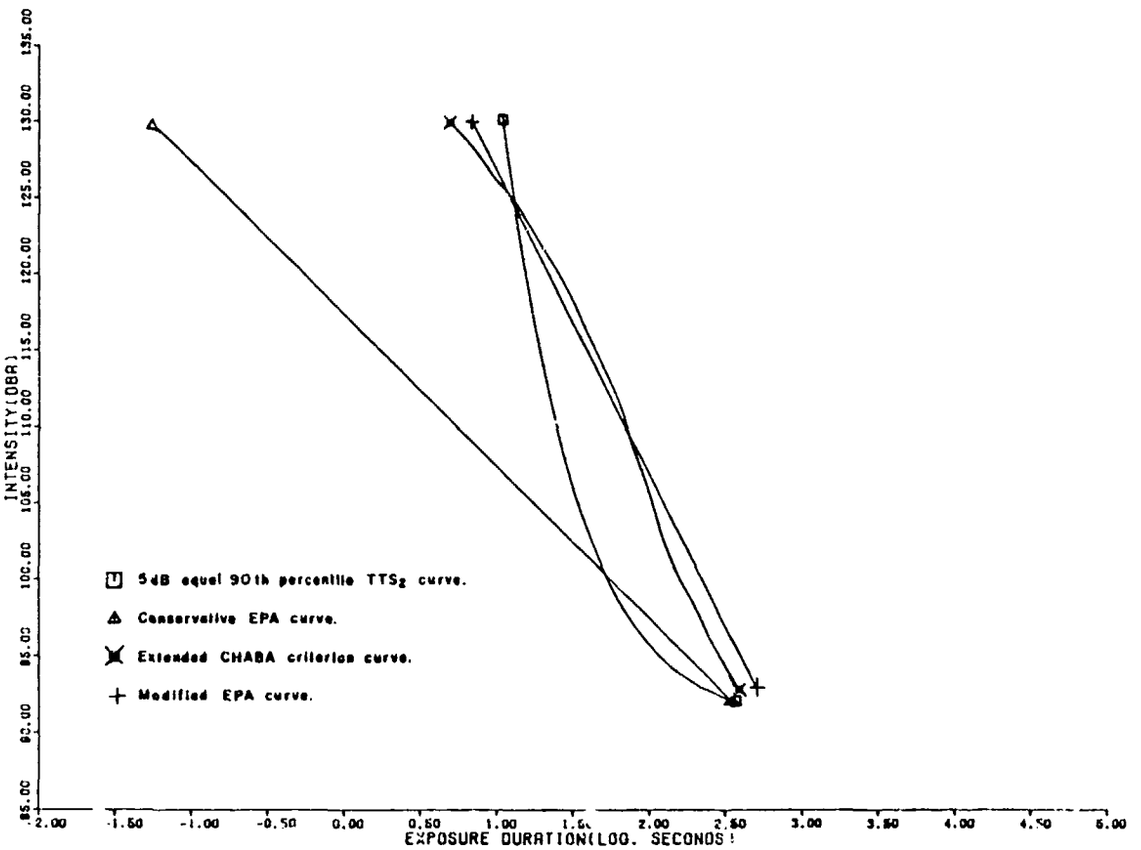

Figure 4. Five dB Equal 90th Percentile Curves. Predictions from Present Data Versus EPA Predictions.

At 92 dBA, our prediction of duration is strikingly close to the conservative EPA prediction (viz., 366.8 versus 357.2 seconds). Then, until an intensity of about 101 dBA, our predictions are more conservative than the conservative EPA predictions. Above that intensity, however, the conservative EPA predictions become increasingly more conservative than our predictions.

Figure 4 also shows that the modified EPA and extended CHABA criterion predictions are fairly similar. And, while neither our predictions nor the extended CHABA criterion predictions consider the intensity-exposure duration tradeoffs to be linear, it is evident that our exposure duration predictions become asymptotic with increases in intensity, while the extended CHABA criterion duration predictions appear to decrease at a decreasing rate with increases in intensity.

Between 92 dBA and about 125 dBA, our duration predictions are more conservative than either the modified EPA or the extended CHABA criterion predictions. From that intensity upwards, however, our predictions become increasingly less conservative. But even at 130 dBA the three separate predictions are not too far apart (11 versus 7 versus 5 seconds).

If our 5 dB equal 90th percentile TTS_2 curve bears a reasonable resemblance to reality (and it is reasonable to suppose that it does, since it was based upon a relatively large number of observations at each of 10 appropriately spaced exposure levels), then the conservative EPA curve is too conservative for intensities between 92 and 130 dBA, while the modified EPA and extended CHABA criterion curves are not sufficiently conservative. While the EPA curves were extrapolated from a variety of different sources, our curve was interpolated from the data collected in the present investigation. Thus, even though different strategies were used to derive the curves the EPA curves effectively envelop our 5 dB equal 90th percentile curve.

To show the reader the degree of protection afforded by existing noise exposure regulations, the four 5 dB equal 90th percentile TTS_2 curves are plotted in Figure 5. They are presented in relation to curves representing

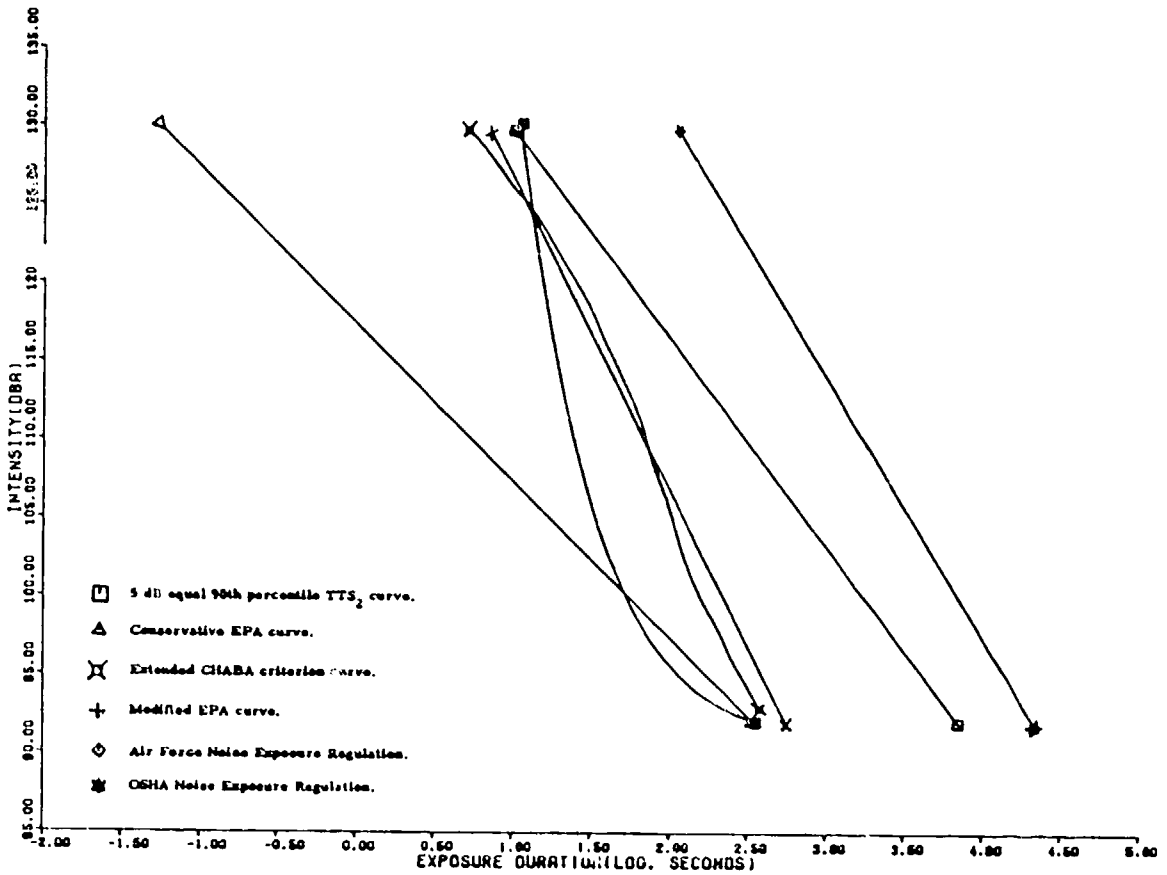

Figure 5. Five dB Equal 90th Percentile Curves Versus Existing Noise Exposure Regulations.

equivalent maximum daily exposure levels permissible under current Air Force (1973) and OSHA noise exposure regulations. Although neither the Air Force nor the OSHA regulation permit exposures beyond 115 dBA regardless of exposure duration, these curves were, for purposes of comparison, extended to 130 dBA. The Air Force regulation permits a daily exposure equivalent to an 8-hour exposure at 84 dBA (with equivalance being defined by a 4 dB halving rule) while the OSHA regulation permits a daily exposure equivalent to 8 hours at 90 dBA (with a 5 dB halving rule).

Except at the highest intensities, which are not permitted, Figure 5 shows neither the Air Force nor the OSHA noise exposure regulation is even close to affording the protection associated with a 90th percentile TTS_2 of only 5 dB, regardless of whether our predictions or the EPA predictions are considered.

In the real world, though, it is probably unrealistic to expect that noise exposure regulations could ever afford the protection associated with a 90th percentile TTS_2 of only 5 dB. But how about a 90th percentile TTS_2 of 10 dB? In Figure 6, our predicted 10 dB equal 90th percentile TTS_2 curve (no comparable EPA curve is available) is shown plotted in relationship to the Air Force and OSHA exposure regulations. Figure 6 shows that the Air Force exposure regulation affords more protection, for intensities greater than about 117 dBA, than that associated with a 90th percentile TTS_2 of 10 dB. However, within the range of intensities actually permitted (no greater than 115 dBA), neither regulation is sufficiently stringent to produce 90th percentile TTS_2s of 10 dB or less, if our predictions reflect reality reasonably well.

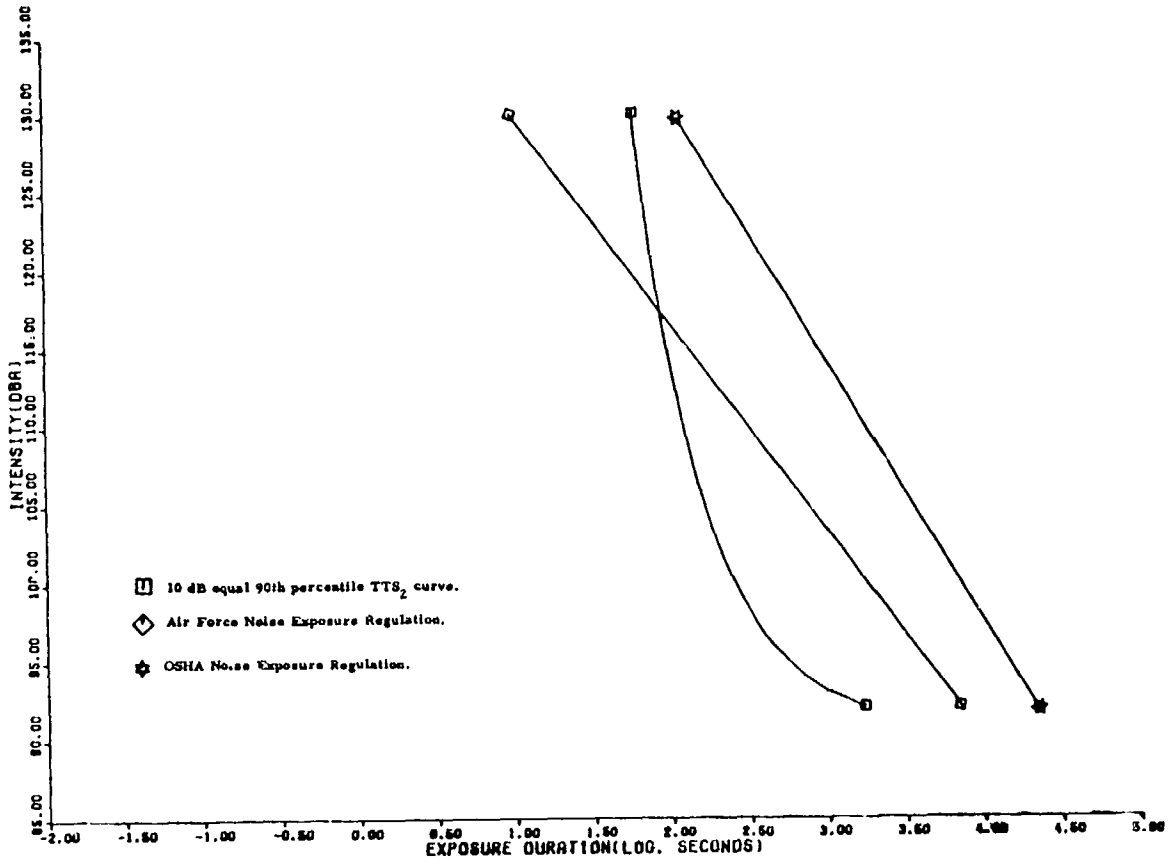

Figure 6. Ten dB Equal 90th Percentile TTS_2 Curve Versus Existing Noise Exposure Regulations.

Measurement Error at 4000 Hz

Suppose that, for each of a great number of individuals, a HTL determination was made. Then, two minutes after a period of "quiet," another HTL determination was made. Then, two minutes after a period of "noise," a final HTL determination was made. From these three determinations, a TTS_2 (quiet) could be calculated by substracting the second HTL from the first HTL and a TTS_2 (noise) could be calculated by substracting the third HTL from the second HTL.

If the number of individuals tested was sufficiently large, the mean TTS_2 (quiet) would be equal to zero dB while the mean TTS_2 (noise) would be greater than zero dB (at least, if some nontrivial noise exposure was employed). Obviously, not all of the TTS_2 (quiet)s would be identical, that is, the variance of TTS_2 (quiet) would be greater than zero. Thus, it would be possible to calculate a 90th percentile TTS_2 (quiet), which would be greater than zero dB, and, it would also be possible to calculate a 90th percentile TTS_2 (noise), which would be larger than the 90th percentile TTS_2 (quiet).

The variation in TTS_2 (quiet) is simply due to the normal fluctuations from one HTL determination to another, i.e., due to measurement error. If one is particularly interested in the 90th percentile TTS_2 (noise), it may seem intuitively logical that the 90th percentile TTS_2 (noise) should be corrected to compensate for these normal fluctuations, that is, for the effect of measurement error.

Measurement error is random and is normally distributed with a mean of zero. The mean TTS_2 (quiet) is equal to the mean measurement error; and the TTS_2 (noise)s also incorporated measurement error. Accordingly, a given TTS_2 (noise) may either be too high or too low, as a consequence of measurement error. However, since measurement error has a mean of zero, the overall effect of measurement error on the TTS_2 (noise) distribution will be nil. To put it another way, to correct the TTS_2 (noise)s for the influence of measurement error, it would be necessary to substract the

mean measurement error from each TTS_2 (noise) value. But since the mean measurement error equals zero dB, this correction procedure would not influence the TTS_2 (noise) distribution in any way. Thus, any attempt to adjust the 90th percentile TTS_2 (noise) for measurement error would not be necessary, since the TTS_2 (noise) distribution is not influenced by measurement error.

While it is true that measurement error will have a mean of zero if the number of individuals tested is sufficiently large, the number of individuals (n = 40) actually tested at the various exposure levels may not have been sufficiently large. The question is, then, did the mean measurement error, for any of the exposure levels used in the present investigation, differ from zero dB? Fortunately, it is possible to estimate the magnitude of the measurement error. When the preexposure HTL is substracted from the practice test HTL, this quantity constitutes a rough estimate of TTS (quiet) which, as previously pointed out, is an estimate of the magnitude of measurement error.

To determine whether it might be appropriate to adjust any of the TTS_2 (noise) distributions for the influence of measurement error, a t-test was calculated at each of the 10 exposure levels to determine whether the estimate of measurement error (i.e., the preexposure HTL substracted from the practice test HTL) at 4000 Hz was significantly different from zero dB. These tests are summarized in Table 5.

Table 5 shows that none of the mean measurement error estimates differed significantly ($p \leq .05$) from zero dB. Thus, there was no reasonable basis for adjusting the 90th percentile TTS_2s associated with any of the 10 exposure levels, since there was no evidence of any systematic bias as a consequence of measurement error.

TABLE 5

ESTIMATED MEASUREMENT ERROR (PRACTICE-MINUS PREEXPOSURE HTL) AT 4000 HZ

Exposure Level		Mean Estimated Measurement Error	SD	t*
dBA	Seconds			
92	40	.50	2.69	1.18
92	160	.45	2.22	1.28
92	1000	.45	2.90	.98
115	160	.35	2.33	.95
120	10	-.25	2.80	-.56
120	40	-.48	2.58	-1.16
125	1	.38	1.58	1.50
125	10	.23	2.08	.68
130	1	.30	2.23	.85
130	10	-.93	3.13	-1.87

*Critical value of $t_{(39)}$, at the .05 level, is 2.02.

Temporal Effects at 4000 Hz

At each frequency, it takes 30 seconds to complete the HTL determination. Since the postexposure HTL determinations commenced at 60 seconds following noise termination, the TTSs at 4000 Hz, while nominally considered to be TTS_2s, were actually $TTS_{1.75}$ and $TTS_{2.75}$ for the left and right ears respectively while the combined TTS_2 at 4000 Hz was actually a $TTS_{2.25}$.

For all 400 observations, the $TTS_{1.75}$ for the left ear was 2.33 dB while the mean $TTS_{2.75}$ for the right ear was 1.92 dB. Since there would be no a priori reason to suspect that the TTS for the right ear would be any smaller than the corresponding TTS for the left ear, the slightly smaller right ear TTS could have been the result of the intervening 60 seconds between the two postexposure HTL determinations, i.e., the right ear had more time (60 seconds) in which to recover from the effect of the noise exposure than did the left ear.

The right ear $TTS_{2.75}$, however, was not significantly lower than the left ear $TTS_{1.75}$, $t(399) = 1.59$, $p > .05$. Since a time differential of 60 seconds apparently had no effect on the observed TTSs, there is no reason to suspect that a 15-second time differential may have had some effect. Therefore, we may safely assume that the combined $TTS_{2.25}$ is a reasonable estimate of the combined TTS_2 at 4000 Hz.

Applicability of 90th Percentile TTS_2 at 4000 Hz Predictions

Obviously the auditory sensitivity of the 94 subjects in this investigation could have some bearing upon the applicability of our prediction. Therefore, the combined HTL (from the preexposure test), as well as the 10th, 50th (median), and 90th percentile HTLs, are shown in Table 6 for all 400 audiometric observations. This table shows that the subjects had excellent hearing, as reflected by both the average and 50th percentile HTLs. Furthermore, if the intra-subject variability had been eliminated (by calculating average HTLs for each of the 94 subjects, rather than displaying the HTLs for all 400 observations), the standard deviations and 90th percentile HTLs, in Table 6, would have been somewhat smaller.

TABLE 6

COMBINED HTL AT SIX AUDIOMETRIC FREQUENCIES

Frequency (Hz)	Hearing Threshold Level (HTL)				
			Percentile		
	x	SD	10th	50th	90th
500	3.1	5.9	-4.0	2.3	11.3
1000	-0.6	5.14	-6.8	-1.5	6.8
2000	-1.7	5.29	-7.5	-3.0	5.2
3000	-2.0	4.29	-7.1	-2.5	4.5
4000	-1.6	4.78	-7.2	-2.1	4.4
6000	3.7	6.50	-4.5	3.1	12.8

Not too surprisingly, the auditory acuity of our sample of subjects is better than that of the entire population. If our sample of subjects had been completely representative of the entire population, the observed mean TTS_2s (and, accordingly, the 90th percentile TTS_2s) would have been somewhat smaller than those actually observed, since the magnitude of the HTL will place some upper limit on TTS_2. The significance of this is simply that our predicted 5 dB equal 90th percentile TTS_2 curve would, if it were used to define permissible noise exposure levels, offer more protection to individuals with relatively good hearing than would a similar curve based upon a sample of individuals that were representative of the entire population with respect to auditory acuity. That is, our curve, as a consequence of being based upon a sample of individuals with quite good hearing, is a fairly conservative estimate of what contitutes "safe" noise exposures.

B. COMBINED TTS_2 AT 3000 HZ

Although our main interest centered around the TTS_2 at 4000 Hz, the combined TTS_2 at 3000 Hz was also tested at each of the 10 exposure levels, in order to determine whether reliable threshold shifts had occurred. In each test, a one-tailed t-test was used to determine whether the observed shift was significantly greater than zero. These analyses are summarized in Table 7, which shows that all of the noise exposures did produce threshold shifts that were significantly ($p \leq .05$) greater than zero. Furthermore, TTS_2 at 3000 Hz also varied systematically with variations in noise intensity and exposure duration.

C. COMBINED TTS_{30} AT 3000 AND 4000 HZ

To determine whether TTS was particularly persistent for the various exposure levels used, the combined TTS_{30} was tested at both 3000 and 4000 Hz, at each of the 10 exposure levels, by means of a series of one-tailed t-tests. These tests are summarized in Table 8, which shows that most of the

TABLE 7

COMBINED TTS_2 AT 3000 HZ, SUMMARY OF T TESTS

Exposure Level		TTS_2 (Average)	Standard Deviation	t(One-Tailed)
dBA	Seconds			
92	40	1.38	2.53	3.44*
92	160	3.83	3.08	7.85*
92	1000	3.60	3.89	5.86*
115	160	6.85	6.12	7.08*
120	10	1.11	1.93	3.65*
120	40	2.96	4.48	4.18*
125	1	1.40	2.17	4.09*
125	10	1.91	3.07	3.95*
130	1	1.96	2.84	4.38*
130	10	2.45	3.50	4.42*

*Statistically significant, $p \leq .05$.

TABLE 8

COMBINED TTS_{30} AT 3000 AND 4000 HZ, SUMMARY OF T TESTS

Exposure Level		3000 Hz			4000 Hz		
dBA	Seconds	TTS_{30}	SD	t	TTS_{30}	SD	t
92	40	-.64	2.77	-1.46	-.41	2.24	-1.16
92	160	.10	2.78	.23	.03	2.76	.06
92	1000	-.36	3.89	- .68	.73	2.35	1.95*
115	160	1.40	3.30	2.68*	1.98	3.08	4.05*
120	10	-.09	2.15	- .26	.76	1.98	2.43*
120	40	.53	1.92	1.73*	1.06	2.67	2.51*
125	1	.18	1.66	.67	.73	2.33	1.97*
125	10	-.29	1.95	- .93	.39	2.58	.95
130	1	.40	2.69	.94	.14	3.33	.26
130	10	.55	3.59	.97	.66	3.38	1.24

*Statistically significant, one-tailed t test, $p \leq .05$.

TTS_{30}s were not significantly greater than zero. This would be expected considering the relatively nominal TTS_2s that were observed. In all instances, except one in which the TTS_{30} was significantly greater than zero, the mean TTS_{30} was considerably lower than the mean TTS_2 (see Tables 2 and 7). The one exception was the TTS_{30} for the 120 dBA 10-second exposure--in which case, the mean TTS_2 was 0.78 while the TTS_{30} was 0.76 dB, both of which represent extremely nominal mean threshold shifts.

D. NOISE RATING SCALES

Average scores on the four rating scales, are shown in Table 9 for each of the 10 exposure levels. The subjective response data for part of the observations were lost for two exposure levels (viz., 20 observations from the 92 dBA 160-second exposure level and 19 observations from the 115 dBA 160-second exposure level). Accordingly, for the subjective data analyses, data were available for only 361 rather than 400 observations. Separate multiple regression analyses were performed in which each subjective variable in turn, was treated as the dependent variable. In each of these analyses, intensity (dBA), exposure duration (minutes) and intensity x exposure duration were treated as the independent variables. These regression analyses are summarized in Table 10.

Table 10 shows that all four of the multiple correlation coefficients were statistically significant ($p \leq .05$), indicating the subjective ratings varied as a function of the intensity, the exposure duration, and their interaction. The Beta coefficients, shown in the same table, indicate the relative contributions of the independent variables to the observed multiple R. As such, the Beta coefficients may be used in defining the nature of the relationships.

TABLE 9

RATING SCALES, AVERAGE SCORES

Exposure Level		Rating Scale							
dBA	Seconds	Loudness		Acceptability		Pleasantness		Concentration	
		x	SD	x	SD	x	SD	x	SD
92	40	5.53	1.28	2.05	0.64	50.53	16.33	3.85	0.86
*92	160	5.25	1.58	2.05	0.60	48.00	15.11	3.80	0.95
92	1000	6.00	1.11	2.33	0.69	59.33	18.13	4.15	0.77
**115	160	7.67	1.24	2.57	0.68	67.24	21.42	4.52	0.68
120	10	7.73	1.20	2.73	0.51	70.23	18.55	4.83	0.38
120	40	7.78	0.92	2.83	0.45	72.43	16.64	4.75	0.44
125	1	7.88	1.20	2.73	0.45	70.93	20.59	4.80	0.46
125	10	8.10	0.93	2.83	0.38	76.65	16.24	4.90	0.30
130	1	8.20	0.99	2.85	0.36	77.35	15.95	4.88	0.33
130	10	8.50	0.75	2.90	0.30	85.13	13.32	4.98	0.16

* Data available for 20 subjects, rather than 40.
** Data available for 21 subjects, rather than 40.

TABLE 10

RATING SCALES
MULTIPLE REGRESSION ANALYSIS, SUMMARY TABLE

Rating Scale	R	R^2	Beta Coefficients		
			I	T	IxT
Loudness	0.70	0.49	0.76	0.00	0.12
Overall Acceptability	0.29*	0.08	0.32	0.06	0.00
Pleasantness	0.52	0.27	0.61	0.16	0.00
Concentration	0.59*	0.34	0.66	0.13	0.00

*Statistically significant, $p \leq .05$. Critical value of R, at the .05 level, is 0.178.

Loudness Ratings

On the loudness scale, the individual rated the loudness of the noise exposure on a 9-point scale that ranged from "extremely soft" to "extremely loud." Nearly 50 percent of the variation in the loudness ratings could be accounted for by variation in the independent variables. The Beta coefficients, show that noise intensity was the primary contributor. Thus, for all practical purposes, variations in loudness ratings (to the extent that they could be accounted for) were determined by variations in noise intensity. Specifically, as noise intensity increased, loudness ratings also tended to increase.

Acceptability Ratings

On the acceptability scale, the individual rated the acceptability of the noise exposure on a 3-point scale that ranged from "liked it" to "disliked it." Here again, intensity was the primary contributor to the observed multiple R. However, only a negligible portion (8 percent) of the variation in acceptability ratings could be accounted for by variation of the independent variables. This probably suggests that the 3-point rating scale was simply too insensitive to produce meaningful results.

Pleasantness Ratings

On the pleasantness scale, the individual rated the pleasantness of the noise exposure on a 100-point scale that ranged from "increasing pleasantness" to "increasing unpleasantness." As indicated by the Beta coefficients, the noise exposures became increasingly unpleasant with increases in noise intensity and, to a lesser extent, with increases in exposure duration.

Concentration Ratings

On the concentration scale, the individual rated the affect that the noise exposure would have on concentration, on a 5-point scale ranging from "it would help a lot" to "it would interfere a lot." Again, it can be seen that higher ratings were primarily determined by higher noise intensities and, to a lesser extent, by longer exposure durations.

Overview of Subjective Ratings

All the subjective ratings were determined primarily by the intensity of the noise exposure. Exposure duration and noise intensity x exposure duration had little or no influence on the ratings. The neutral points on the four scales were 5, 2, 50.5, and 3, respectively. Table 10 shows that for the 92 dBA exposures, the mean ratings, on the four subjective variables were all reasonably close to "neutral." With increasing intensities, however, the mean ratings became increasingly distant from neutrality. In fact, the mean ratings for the 130 dBA exposures approached "extremely loud," "disliked it," "increasingly unpleasant," and "it would interfere a lot."

E. CORRELATIONS BETWEEN AUDIOMETRIC VARIABLES

To answer certain basic questions concerning the interrelation between audiometric variables, simple correlation coefficients were calculated. Each correlation coefficient, r, is based upon all 400 audiometric observations.

1. How well did the practice test HTLs (right ear) correspond to the preexposure HTLs (right ear)?

Frequency (Hz)	Correlation Coefficient (r)
500	0.80[3]
1000	0.87[3]
2000	0.83[3]
3000	0.83[3]
4000	0.89[3]
6000	0.79[3]

These correlations show that the practice test HTLs were directly related to, and corresponded quite closely with, the preexposure HTLs. Furthermore, considering the magnitudes of the r^2s, it is evident that at each frequency in excess of 60 percent of the variation in preexposure HTLs could be accounted for by variation in the practice test HTLs (e.g., the minimum $r^2 = 0.79^2 = 0.62$).

[3] Statistically significant ($p \leq .05$). Critical value of r, at the .05 level, is 0.098.

2. How well did the left ear HTLs (preexposure) correspond to the right ear HTLs?

Frequency (Hz)	Correlation Coefficient
500	0.71^3
1000	0.71^3
2000	0.69^3
3000	0.57^3
4000	0.56^3
6000	0.55^3

From these correlations, it is evident that the HTLs in one ear were directly related to those in the other ear. The magnitude of these relationships, though, were not nearly as great as were those between the practice test and preexposure tests HTLs.

3. How were the combined HTLs (preexposure) related to the combined TTSs?

Frequency (Hz)	Correlation Coefficient	
	TTS_2	TTS_{30}
500	-	-0.32^3
1000	-	-0.20^3
2000	-	-0.29^3
3000	-0.03	-0.22^3
4000	-0.02	-0.15^3
6000	-	-0.25^3

The TTS_2 was evaluated at only 3000 and 4000 Hz. At these frequencies, HTLs were not significantly related to TTS_2s; i.e., the magnitudes of the TTS_2s were independent of the magnitudes of the preexposure HTLS. However, for all six audiometric frequencies, HTL was negatively related to TTS_{30}, suggesting that TTSs may have diminished somewhat more rapidly for individuals with higher preexposure HTLs. This latter finding is probably

of little practical significance considering the magnitudes of the observed r^2s, since at all frequencies, less than 10 percent of the variation in TTS_{30} could be accounted for by variation in HTL.

SECTION 4
DISCUSSION

In the present investigation, since our interest was in producing 90th percentile TTS_2s in the neighborhood of only 5 dB, it was somewhat risky simply selecting the exposure levels to be used. By selecting exposure levels we anticipated would produce such nominal 90th percentile TTS_2s, it was not improbable that we might select exposure levels that would produce zero dB TTS_2s. Fortunately, however, we were lucky. All the noise exposure levels used, with one exception, produced combined TTS_2s that were significantly greater than zero dB at both 3000 and 4000 Hz. The exception (the 92 dBA 40-second exposure) produced a TTS_2 significantly greater than zero dB at 3000 Hz, but not at 4000 Hz.

Since reliable threshold shifts were observed, it was then appropriate to determine whether TTS_2 at 4000 Hz (the frequency of primary interest) varied as a function of exposure level. Therefore, based upon the 400 noise exposures, a multiple regression analysis was performed in which TTS_2 was treated as the dependent variable while intensity, exposure duration, and intensity x exposure duration were treated as the independent variables. The intensity x exposure duration interaction was included as an independent variable, since it seemed likely that TTS_2 would not only be determined by some linear combination of intensity and exposure duration, but also by the particular combination used. Considering the individual variability in TTS_2 that could be expected (and was observed) at any given exposure level, the resulting multiple R (0.4544) was surprisingly high. The multiple regression equation associated with this analysis only permits one to predict the <u>average</u> TTS_2 at 4000 Hz that could be expected for a given combination of intensity and exposure duration, since it is unable to account for the individual variability in TTS_2 that occurs at a given exposure level. This is fine, though, since our interest was in predicting group response to noise exposure, not individual response.

Another multiple regression analysis was performed to determine whether TTS_2 at 4000 Hz varied more systematically with exposure level if the individual variability in TTS_2 at a given exposure level were eliminated. Accordingly, in this analysis, average TTS_2 was treated as the dependent variable. Thus, there was 10 average TTS_2 observations (one for each exposure level). The resulting multiple R was substantial (R = 0.9877), reflecting the fact that the group response to noise exposure varied much more systematically with exposure level than did the individual response.

Our primary interest, though, was in the 90th percentile TTS_2 at 4000 Hz. Therefore, a multiple regression analysis was performed in which the 90th percentile TTS_2 was treated as the dependent variable. There were 10 observations, one for each exposure level. The magnitude of the multiple R (0.9819) indicated that the 90th percentile TTS_2 also varied quite systematically with exposure level. Using the resulting regression equation, a 5 dB equal 90th percentile TTS_2 curve was described for noise intensities ranging from 92 to 130 dBA (the range of intensities actually evaluated).

Multiple regression equations will permit one to make reasonable interpolations from the data upon which they were based since the interpolations will reflect the trends actually evident in the data. This is the sense in which multiple regression equations were used in the present investigation. One should be cautious, however, in using regression equations to extrapolate from the data upon which they were based, since the trends outside the range of values considered might be very different and, as a consequence, the extrapolations may be quite meaningless.

The 5 dB equal 90th percentile TTS_2 curve, which reflects the trends that were observed in the actual data, was compared to the equivalent EPA (1974) curves. Our prediction as to the exposure duration necessary to produce a 5 dB 90th percentile TTS_2 at 92 dBA was amazingly close to the corresponding conservative (equal energy rule throughout) EPA prediction, viz., 367 versus 357 seconds). Then, until an intensity of approximately 101 dBA

was reached, our predictions were somewhat more conservative (i.e., the predicted exposure durations, for a given intensity, were shorter). That our predictions were more conservative in this intensity range, however, may simply be an artifact of the fact that we did not actually evaluate any intensities within this range. For noise intensities of 101 dBA and above, though, the conservative EPA predictions become increasingly more conservative than our predictions.

Our 5 dB equal 90th percentile TTS_2 predictions are more conservative than either EPA's modified predictions (6 dB halving rule, for exposure durations of less than 15 minutes) or extended CHABA criterion predictions for noise intensities of 92 to approximately 125 dBA, while for higher intensities our predictions are somewhat less conservative.

In general then, our predictions suggest that the conservative EPA predictions may be too conservative while the EPA's modified and extended CHABA criterion predictions may not be sufficiently conservative. Although our predictions are based upon a systematic evaluation of 10 exposure levels, it would be unreasonable to assume that they are more than "ball park" estimates of reality (Yerges, 1976). They do suggest, however, that in reality a 5 dB equal 90th percentile TTS_2 curve (i.e., a safe exposure curve) would probably be intermediate between the conservative EPA curve and EPA's modified and extended CHABA criterion curves.

After commencing the present investigation, we became aware of an intriguing study by Brownsey (1973), in which the TTS_2 consequences of brief noise exposures were evaluated. In Table 11, we have shown the median TTS_2 at 4000 Hz for each of the 37 exposure levels that Brownsey reported. Brownsey's noise exposures levels, measured in octave band sound pressure level ranged from 82 to 122 dB, which correspond to A-weighted intensities of approximately 90 to 130 dBA.

Table 11 shows that median TTS_2s varied quite systematically with exposure level. But how well do these median TTS_2s correspond to those observed in the present investigation? Although the exposure levels utilized in the two investigations were not the same, some comparisons are possible. Accordingly, in Table 12, we have shown, for roughly comparable exposure levels, the observed median TTS_2 for the two investigations.

TABLE 11

COMBINED TTS_2 AT 4000 HZ, MEDIAN
(From Brownsey, 1973)

Exposure Level		Median TTS_2
dBA	Seconds	
90	600	6
90	300	3
95	600	11
95	300	7
95	120	3
95	60	1
100	600	16
100	300	11
100	120	6
100	60	3
100	30	2
105	600	21
105	300	15
105	120	10
105	60	5
105	30	4
105	12	1
110	600	26
110	300	20
110	120	13
110	60	8
110	30	6
110	12	2
115	300	25
115	120	17
115	60	11
115	30	8
115	12	4
120	120	20
120	60	14
120	30	10
120	12	6
125	60	16
125	30	12
125	12	7
130	30	14
130	12	9

Table 12 shows theat the median TTS_2s observed by Brownsey were very dissimilar from those observed in the present investigation, for roughly comparable exposure levels. The median TTS_2s observed by Brownsey were considerably higher than those we observed. For instance, at 130 dBA the median TTS_2 reported by Brownsey after a 12-second exposure was 9 dB while, for the same intensity, we observed a median TTS_2 after a 10 second exposure of only 0.75 dB.

TABLE 12

COMBINED TTS_2 AT 4000 HZ, MEDIAN
(Brownsey, 1973, Versus Present Investigation)

Brownsey (1973)			Present Study		
Exposure Level		Median TTS_2	Exposure Level		Median TTS_2
dBA	Seconds		dBA	Seconds	
95	60	1	92	40	1.18
95	120	3	92	160	1.31
115	120	10	115	160	7.59
120	12	6	120	10	0.92
120	30	10	120	40	1.60
125	12	7	125	10	1.22
130	12	9	130	10	0.75

Why the discrepancy? The noise exposures used by Brownsey were free-field exposures, while our exposures were via earphones. And, if anything, it would be logical to expect that the free-field exposures would produce smaller, not larger TTS_2s, Thus, the different means of presenting noise is apparently not the explanation for the discrepancy between the two studies. In the Brownsey study, the TTSs at 4000 Hz were adjusted upward, based upon recovery rates, to reflect TTS_2s. Our TTS_2s which, as previously pointed out, were actually $TTS_{2.25}$s, were not adjusted, since there was no reasonable basis to adjust them. Perhaps, then, the higher TTS_2s

reported by Brownsey partially reflect the adjustments he made. Unfortunately, however, we are unable to even speculate as to what might explain the remainder of the discrepancy between the findings of Brownsey (1973) and the present findings.

It probably was fortunate, though, that we were unaware of the Brownsey study when we began the present investigation. Had we based our exposure levels upon a consideration of the Brownsey data, in all likelihood we would have selected exposure levels that would have produced TTS_2s that were not significantly greater than zero dB. Thus, the entire investigation would have been in vain, because it would not have enabled us to provide a comparative evaluation of the EPA's "safe exposure" curves.

The subjective noise ratings, which were made by the individual after noise exposure, were not particularly interesting. All four rating scales, in essence, conveyed the same information: noise exposure is unpleasant and it becomes increasingly so, with increases in noise intensity. Hardly a surprising finding!

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APPENDIX A

INSTRUCTIONS TO SUBJECTS

NOISE/HEARING EXPERIMENT

INSTRUCTIONS TO SUBJECTS

1. On experiment days, you are asked to wear the earmuffs provided for one hour before the pre-noise test. During that hour, you may study, read, or just meditate in a quiet place, but please remain sitting quietly. Should you need to visit the rest-room while waiting, please tell the experimenter and keep the earmuffs on.

2. At the end of the waiting hour, you enter the soundproof chamber (in Room 323 in the Engineering Labs), where the procedure is as follows:

TIME (Minutes)	PROCEDURE
-05 (approx)	Enter soundproof room and be seated. Take off earmuffs and spectacles (if worn). Put on earphones (BLUE phone on LEFT ear). Make sure that the headband carrying the earphones is comfortably adjusted for you: IT IS IMPORTANT THAT, once the phones are on your head and the test has begun, YOU DO NOT CHANGE THEIR POSITION until the experimenter says that you may remove them. Hold the pushbutton (provided for hearing tests) in a comfortable position. When you are ready, the chamber door will be closed and you will hear further test instructions over the intercom. Speak up if you wish to stop the test at any time or if anything does not seem right with the earphones or other equipment.
-03 (approx)	Practice hearing test in RIGHT ear (six tones in succession).
0 (Begin Test)	First "FULL" hearing test: six tones in succession, first in the LEFT, then in the RIGHT ear, without a break. Do not move the earphones after this test.
07	After a verbal warning and a "Three - Two - One" countdown from the experimenter, you will hear the test noise in your earphones. This noise has a rushing or roaring quality. It builds up in less than a second to a steady level and stops equally suddenly. The experimenter will tell you how long it is going to last on each occasion: you only hear the test noise once on any experiment day. Do not move the earphones. The "SHORT" hearing test begins one minute after the test noise stops.
10 (approx)	"SHORT" hearing test: two tones in succession, first in the LEFT and then in the RIGHT ear. After this test, the door will be opened and the experimenter will say when you may remove the earphones. You will then be asked to reply to some simple questions about your subjective reactions to the rushing test noise. There will then be asked to reply to some simple questions about your subjective reactions to the rushing test noise. There will then be a 20-minute interval, during which you may read or meditate in the soundproof chamber (please don't leave it unless necessary).
35 (approx)	Second "FULL" hearing test (left and right ears).

3. Thank you for attending.

APPENDIX B

NOISE RATING SCALES

Date:
Subject No.
Noise:

NOISE RATING SCALES

Please would you use the following scales to rate your personal reactions to the rushing noise to which you listened. Your name is not required on this form. Please reply to all four questions.

1. How loud/soft was the noise? Please check ONE box:

   ( ) Extremely soft
   ( ) Very soft
   ( ) Soft
   ( ) Not very soft
   ( ) Middling
   ( ) Not very loud
   ( ) Loud
   ( ) Very loud
   ( ) Extremely loud

2. Indicate your feelings about the noise (check ONE box):

   ( ) I liked it
   ( ) I disliked it
   ( ) I have no feelings about it

3. How pleasant/unpleasant was the noise? To answer this question, please put a cross-mark (thus: ————) on the heavy line below to show the direction and strength of your feeling. If you have no feeling one way or the other, mark the middle of the line. If you found the noise pleasant, mark the line to the left of center; if you found the noise unpleasant, mark the line to right of center. The further off center you mark (in either direction), the stronger is the indication of your feelings about the noise: the ends of the line represent extreme feelings of pleasantness or unpleasantness:

   (Increasing pleasantness) (Increasing unpleasantness)

   ———————————————

4. If noise like that which you have just heard went on continuously while you were trying to concentrate (study or read), how would it affect your task? (Check ONE box)

   ( ) It would help a lot
   ( ) It would help a little
   ( ) It would make no difference
   ( ) It would interfere a little
   ( ) It would interfere a lot

APPENDIX C

HEARING THRESHOLD LEVEL (HTL) SCORES FOR 400 NOISE EXPOSURES (ORGANIZED BY SUBJECT)

SUBJECT 1 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					9	21	5	10	11	3
1000 HZ					6	5	-3	-3	5	0
2000 HZ					5	0	-3	0	-2	-3
3000 HZ					8	6	1	1	8	3
4000 HZ					9	4	1	1	4	11
6000 HZ					13	18	10	22	21	15
HTL PRE-TEST,LEFT:										
500 HZ					16	16	0	7	29	7
1000 HZ					5	5	-5	0	4	-3
2000 HZ					2	1	-5	-3	-1	-2
3000 HZ					3	4	-2	1	2	1
4000 HZ					6	6	-1	2	2	1
6000 HZ					16	18	8	20	21	19
HTL PRE-TEST,RIGHT:										
500 HZ					18	14	4	10	12	10
1000 HZ					5	3	-3	-3	2	-3
2000 HZ					4	2	-3	0	2	-1
3000 HZ					6	8	1	1	10	0
4000 HZ					9	4	1	1	10	3
6000 HZ					13	24	12	22	25	14
HTL POST(2),LEFT:										
3000 HZ					2	7	0	1	1	0
4000 HZ					8	14	2	-1	2	1
HTL POST(2),RIGHT:										
3000 HZ					5	12	2	2	6	9
4000 HZ					10	15	2	1	7	4
HTL POST(30),LEFT:										
500 HZ					15	18	0	7	6	5
1000 HZ					0	5	-2	0	4	-3
2000 HZ					1	2	-2	-6	-3	-3
3000 HZ					2	8	0	-1	1	-1
4000 HZ					8	14	4	5	3	2
6000 HZ					10	21	16	10	15	11
HTL POST(30),RIGHT:										
500 HZ					11	14	3	9	6	4
1000 HZ					3	3	-4	4	-2	-2
2000 HZ					0	-2	-2	0	0	-4
3000 HZ					2	12	1	4	2	0
4000 HZ					10	12	2	1	1	-1
6000 HZ					20	26	18	19	12	8

SUBJECT 2 MALE 26 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	-5		-3		-4	-5	-6	-8	10	10
1000 HZ	-2		-3		-4	-7	-10	-7	6	5
2000 HZ	3		-2		1	-7	-6	-5	12	10
3000 HZ	-2		-4		-7	-8	-10	-5	10	5
4000 HZ	-2		-10		-2	-7	-9	-7	12	11
6000 HZ	9		-10		0	-1	2	14	16	12
HTL PRE-TEST,LEFT:										
500 HZ	-4		-2		-5	-8	-8	-8	9	6
1000 HZ	-3		-3		-6	-10	-7	-8	10	8
2000 HZ	-2		-3		-5	-9	1	-8	0	2
3000 HZ	-4		-2		-7	-10	-2	-8	8	2
4000 HZ	-2		1		-4	-4	-5	1	8	11
6000 HZ	-3		-2		-4	-7	-7	-7	8	6
HTL PRE-TEST,RIGHT:										
500 HZ	-4		-7		-2	-8	-6	-8	9	13
1000 HZ	-4		-1		-4	-9	-8	-7	5	2
2000 HZ	-3		-10		-3	-9	-9	-5	10	8
3000 HZ	-3		-2		-2	-9	-9	-7	9	5
4000 HZ	-2		1		-7	-7	-10	-10	10	11
6000 HZ	7		2		-5	-5	-5	-10	16	10
HTL POST(2),LEFT:										
3000 HZ	2		-1		-6	-7	-9	0	3	8
4000 HZ	4		4		-2	-1	-3	-2	17	11
HTL POST(2),RIGHT:										
3000 HZ	-3		1		-6	-6	-9	-5	10	10
4000 HZ	-4		2		-4	-3	-5	-1	10	11
HTL POST(30),LEFT:										
500 HZ	-5		-5		-6	-7	-8	-10	10	11
1000 HZ	-4		-4		-1	-9	-8	-10	11	8
2000 HZ	-4		-4		-6	-10	-9	-10	2	3
3000 HZ	-4		-3		-6	-10	-8	-9	8	4
4000 HZ	2		1		-2	-2	-3	-8	12	9
6000 HZ	-2		5		-8	-3	-5	-10	10	11
HTL POST(30),RIGHT:										
500 HZ	-4		-4		-5	-6	-9	-10	12	11
1000 HZ	-3		-4		-6	-10	-9	-9	3	7
2000 HZ	-4		-3		-7	-9	-1	-9	16	11
3000 HZ	-4		1		-8	-9	-7	-9	11	9
4000 HZ	3		1		-6	-2	-5	-8	14	12
6000 HZ	20		-3		4	-1	7	-9	20	28

SUBJECT 3 FEMALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	1		8							
1000 HZ	-2		5							
2000 HZ	-7		-5							
3000 HZ	-10		-4							
4000 HZ	-4		-8							
6000 HZ	3		-2							
HTL PRE-TEST,LEFT:										
500 HZ	-3		10							
1000 HZ	0		22							
2000 HZ	-2		2							
3000 HZ	-10		-5							
4000 HZ	-10		-5							
6000 HZ	-10		-4							
HTL PRE-TEST,RIGHT:										
500 HZ	1		6							
1000 HZ	-4		3							
2000 HZ	-4		18							
3000 HZ	-8		-7							
4000 HZ	-6		-8							
6000 HZ	-1		-3							
HTL POST(2),LEFT:										
3000 HZ	-8		3							
4000 HZ	-8		-7							
HTL POST(2),RIGHT:										
3000 HZ	-6		-10							
4000 HZ	-6		-10							
HTL POST(30),LEFT:										
500 HZ	10		4							
1000 HZ	1		9							
2000 HZ	2		1							
3000 HZ	-9		1							
4000 HZ	-9		-5							
6000 HZ	-3		0							
HTL POST(30),RIGHT:										
500 HZ	1		8							
1000 HZ	-4		7							
2000 HZ	4		-5							
3000 HZ	-7		-5							
4000 HZ	-4		-7							
6000 HZ	17		2							

SUBJECT 4 MALE 21 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		7		6	-5	5	3	4	8	17
1000 HZ		9		2	-3	2	1	2	6	10
2000 HZ		-6		-10	-6	-5	-3	-7	-3	1
3000 HZ		-3		-3	-6	-4	-6	-6	2	6
4000 HZ		1		-2	-6	-3	-5	0	2	3
6000 HZ		5		13	13	14	10	-5	12	22
HTL PRE-TEST,LEFT:										
500 HZ		10		5	-2	1	3	7	6	8
1000 HZ		2		-1	-3	-1	1	9	3	14
2000 HZ		-3		-7	-7	-5	-4	-1	-3	2
3000 HZ		-1		-2	-4	0	2	7	2	12
4000 HZ		4		4	-3	4	2	8	4	12
6000 HZ		20		18	14	22	24	19	20	30
HTL PRE-TEST,RIGHT:										
500 HZ		6		6	-5	2	-1	3	4	30
1000 HZ		5		-2	-3	2	0	8	-1	11
2000 HZ		-10		-10	-7	-5	0	-2	-3	3
3000 HZ		-3		-4	-5	-4	2	0	2	9
4000 HZ		2		-4	-8	-2	-3	0	2	10
6000 HZ		6		9	-10	12	12	12	12	22
HTL POST(2),LEFT:										
3000 HZ		9		11	-2	25	3	9	6	4
4000 HZ		10		20	3	28	6	10	7	4
HTL POST(2),RIGHT:										
3000 HZ		-2		1	-7	25	-2	18	0	1
4000 HZ		-1		4	-6	29	-2	4	7	8
HTL POST(30),LEFT:										
500 HZ		11		6	-3	-2	7	10	18	14
1000 HZ		5		3	-3	-2	4	4	2	11
2000 HZ		-4		-7	-7	-6	-5	-5	-2	4
3000 HZ		-1		1	-3	4	3	8	-3	11
4000 HZ		0		4	-2	3	1	9	7	8
6000 HZ		1		24	17	15	25	19	21	23
HTL POST(30),RIGHT:										
500 HZ		5		6	-4	3	5	4	19	22
1000 HZ		1		1	-4	-2	4	4	6	9
2000 HZ		-6		-5	-7	-3	-3	1	1	7
3000 HZ		-4		-3	-4	0	2	1	6	5
4000 HZ		-1		-1	-4	-5	-1	1	5	2
6000 HZ		4		17	16	28	26	14	16	20

SUBJECT 5 FEMALE 21 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	8	8	6	8						
1000 HZ	1	5	1	2						
2000 HZ	1	4	0	6						
3000 HZ	2	2	2	5						
4000 HZ	4	3	3	8						
6000 HZ	2	13	11	11						
HTL PRE-TEST,LEFT:										
500 HZ	4	7	7	6						
1000 HZ	-5	4	-1	0						
2000 HZ	-1	3	1	2						
3000 HZ	4	4	3	6						
4000 HZ	5	4	3	10						
6000 HZ	9	11	18	11						
HTL PRE-TEST,RIGHT:										
500 HZ	3	4	6	4						
1000 HZ	-2	5	4	-1						
2000 HZ	1	3	0	2						
3000 HZ	2	4	2	5						
4000 HZ	3	2	4	7						
6000 HZ	4	13	11	9						
HTL POST(2),LEFT:										
3000 HZ	10	10	12	19						
4000 HZ	12	10	0	14						
HTL POST(2),RIGHT:										
3000 HZ	2	8	4	16						
4000 HZ	5	5	6	19						
HTL POST(30),LEFT:										
500 HZ	4	10	4	11						
1000 HZ	-1	2	-1	3						
2000 HZ	-2	2	-2	9						
3000 HZ	4	7	1	9						
4000 HZ	6	9	2	11						
6000 HZ	11	14	19	11						
HTL POST(30),RIGHT:										
500 HZ	5	9	4	6						
1000 HZ	1	10	1	-2						
2000 HZ	1	7	1	4						
3000 HZ	2	9	1	8						
4000 HZ	5	7	1	11						
6000 HZ	0	15	10	12						

SUBJECT 6 MALE 21 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		10		1	1	5	5	18	20	0
1000 HZ		9		4	1	-3	0	6	10	0
2000 HZ		-1		-3	-5	-6	-1	4	4	0
3000 HZ		0		-4	-8	-7	-7	1	0	-1
4000 HZ		5		1	-3	-5	0	0	5	7
6000 HZ		-2		7	-2	-4	-6	1	3	0
HTL PRE-TEST,LEFT:										
500 HZ		11		11	6	6	4	17	14	3
1000 HZ		6		8	3	2	3	16	8	4
2000 HZ		-2		-3	-7	-6	-4	4	0	-6
3000 HZ		-1		0	-8	-8	-7	6	0	-4
4000 HZ		0		0	-1	-6	-4	3	9	-2
6000 HZ		2		0	6	0	-2	3	11	1
HTL PRE-TEST,RIGHT:										
500 HZ		10		3	1	1	5	13	15	8
1000 HZ		9		5	0	-1	1	4	11	0
2000 HZ		-1		1	-5	-7	-3	3	6	-4
3000 HZ		0		-2	-8	-9	-6	5	-1	-5
4000 HZ		5		0	-3	-6	0	1	7	2
6000 HZ		-2		3	-4	-7	-4	4	1	-1
HTL POST(2),LEFT:										
3000 HZ		5		3	-6	-6	-8	2	4	-1
4000 HZ		3		1	1	-4	-4	4	6	-2
HTL POST(2),RIGHT:										
3000 HZ		2		2	-8	-8	-9	2	2	0
4000 HZ		4		6	-3	-5	-4	4	7	3
HTL POST(30),LEFT:										
500 HZ		10		11	4	6	7	9	19	7
1000 HZ		5		5	-1	2	1	15	14	7
2000 HZ		2		-4	-6	-7	-4	2	0	-5
3000 HZ		2		-1	-9	-6	-8	3	-1	0
4000 HZ		-2		0	-3	-4	-3	5	4	-2
6000 HZ		-3		1	1	6	-3	4	7	7
HTL POST(30),RIGHT:										
500 HZ		6		5	1	4	-2	15	9	10
1000 HZ		4		1	-2	1	-1	7	6	3
2000 HZ		-2		-6	-4	-6	-6	4	2	-2
3000 HZ		2		-4	-10	-9	-6	2	-6	-5
4000 HZ		4		-1	-8	-1	-5	3	4	2
6000 HZ		-3		4	3	-6	-8	2	9	3

SUBJECT 7 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					4	1	-2	1	16	3
1000 HZ					-1	-1	-4	-2	-3	-1
2000 HZ					-3	0	0	1	0	-3
3000 HZ					7	10	11	8	-7	8
4000 HZ					1	2	0	7	-1	1
6000 HZ					13	18	16	8	14	16
HTL PRE-TEST,LEFT:										
500 HZ					1	0	1	0	1	5
1000 HZ					0	-4	-4	-2	-3	1
2000 HZ					2	-3	-1	-2	-2	1
3000 HZ					3	1	2	0	2	4
4000 HZ					5	0	1	0	2	8
6000 HZ					12	11	10	5	14	13
HTL PRE-TEST,RIGHT:										
500 HZ					1	0	-3	1	11	17
1000 HZ					-1	-3	-4	-2	-2	0
2000 HZ					-3	3	0	2	0	0
3000 HZ					6	8	9	11	9	8
4000 HZ					2	2	0	13	1	0
6000 HZ					12	18	15	23	12	18
HTL POST(2),LEFT:										
3000 HZ					3	2	5	3	5	7
4000 HZ					5	0	7	1	5	7
HTL POST(2),RIGHT:										
3000 HZ					10	11	8	12	9	13
4000 HZ					0	5	12	7	1	-10
HTL POST(30),LEFT:										
500 HZ					3	2	1	5	0	-2
1000 HZ					-1	-3	-5	-3	-4	-4
2000 HZ					-2	-5	-1	-4	-3	-3
3000 HZ					0	-1	2	-2	6	-4
4000 HZ					2	-2	5	0	3	0
6000 HZ					10	7	15	10	18	12
HTL POST(30),RIGHT:										
500 HZ					2	-1	0	0	6	3
1000 HZ					0	-3	-3	-1	-1	0
2000 HZ					-3	-3	-2	1	-2	-1
3000 HZ					10	8	10	10	6	11
4000 HZ					0	-2	0	5	1	2
6000 HZ					13	14	13	13	11	18

SUBJECT 8 MALE 22 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-1		-5						
1000 HZ		-7		-7						
2000 HZ		-6		-8						
3000 HZ		-4		-6						
4000 HZ		-5		-6						
6000 HZ		-5		4						
HTL PRE-TEST,LEFT:										
500 HZ		-4		-1						
1000 HZ		-5		-5						
2000 HZ		-6		-6						
3000 HZ		-3		-6						
4000 HZ		-3		-6						
6000 HZ		4		-1						
HTL PRE-TEST,RIGHT:										
500 HZ		-5		-5						
1000 HZ		-4		-7						
2000 HZ		-6		-7						
3000 HZ		-5		-6						
4000 HZ		-2		-5						
6000 HZ		1		2						
HTL POST(2),LEFT:										
3000 HZ		-3		2						
4000 HZ		-3		-8						
HTL POST(2),RIGHT:										
3000 HZ		-5		-8						
4000 HZ		-4		-8						
HTL POST(30),LEFT:										
500 HZ		-2		0						
1000 HZ		-5		-6						
2000 HZ		-5		-5						
3000 HZ		-5		-5						
4000 HZ		-6		-4						
6000 HZ		5		-4						
HTL POST(30),RIGHT:										
500 HZ		-3		-5						
1000 HZ		-2		-5						
2000 HZ		-7		-6						
3000 HZ		-6		-4						
4000 HZ		-3		-5						
6000 HZ		-6		-5						

SUBJECT 9 MALE 19 YEARS OF AGE

INTENSITY(DBA) OURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	4		11							
1000 HZ	3		6							
2000 HZ	10		11							
3000 HZ	-4		5							
4000 HZ	-3		1							
6000 HZ	5		6							
HTL PRE-TEST,LEFT:										
500 HZ	1		14							
1000 HZ	2		9							
2000 HZ	1		5							
3000 HZ	-1		3							
4000 HZ	-6		-4							
6000 HZ	5		9							
HTL PRE-TEST,RIGHT:										
500 HZ	0		9							
1000 HZ	-3		-5							
2000 HZ	6		14							
3000 HZ	-4		15							
4000 HZ	-1		-2							
6000 HZ	4		1							
HTL POST(2),LEFT:										
3000 HZ	0		9							
4000 HZ	-6		-4							
HTL POST(2),RIGHT:										
3000 HZ	-5		0							
4000 HZ	-3		-1							
HTL POST(30),LEFT:										
500 HZ	4		8							
1000 HZ	-2		4							
2000 HZ	0		0							
3000 HZ	-3		-2							
4000 HZ	-5		-7							
6000 HZ	10		12							
HTL POST(30),RIGHT:										
500 HZ	1		6							
1000 HZ	-1		3							
2000 HZ	1		6							
3000 HZ	-5		-1							
4000 HZ	-3		-1							
6000 HZ	-1		5							

SUBJECT 10 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-3		-1							
1000 HZ	-4		-6							
2000 HZ	-4		-3							
3000 HZ	-4		-5							
4000 HZ	-6		-6							
6000 HZ	1		-5							
HTL PRE-TEST,LEFT:										
500 HZ	-1		-2							
1000 HZ	-5		-5							
2000 HZ	-5		-5							
3000 HZ	-5		-5							
4000 HZ	-7		-7							
6000 HZ	-5		-4							
HTL PRE-TEST,RIGHT:										
500 HZ	-3		-4							
1000 HZ	-6		-5							
2000 HZ	-5		-4							
3000 HZ	-4		-5							
4000 HZ	-6		-6							
6000 HZ	1		-5							
HTL POST(2),LEFT:										
3000 HZ	-5		-4							
4000 HZ	-7		-8							
HTL POST(2),RIGHT:										
3000 HZ	-4		-4							
4000 HZ	-3		-4							
HTL POST(30),LEFT:										
500 HZ	-1		3							
1000 HZ	-5		-5							
2000 HZ	-5		-3							
3000 HZ	-5		-2							
4000 HZ	-7		-6							
6000 HZ	-4		-4							
HTL POST(30),RIGHT:										
500 HZ	-4		-3							
1000 HZ	-5		-5							
2000 HZ	-4		-3							
3000 HZ	-2		-2							
4000 HZ	-4		-5							
6000 HZ	0		-1							

SUBJECT 11 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-6	4	-2	-1	0	0
1000 HZ					12	5	-1	-6	0	6
2000 HZ					1	-2	-5	-7	-6	-5
3000 HZ					0	-5	-6	-6	-6	-8
4000 HZ					-5	-6	-6	-8	-6	-8
6000 HZ					2	8	-2	2	-2	1
HTL PRE-TEST,LEFT:										
500 HZ					7	8	-2	-4	-1	0
1000 HZ					-1	2	-3	-4	-2	1
2000 HZ					-1	-1	-3	0	1	0
3000 HZ					-4	-7	-7	-6	-6	-6
4000 HZ					-5	-6	-7	-6	-7	-6
6000 HZ					7	1	8	1	8	3
HTL PRE-TEST,RIGHT:										
500 HZ					5	0	-2	-2	-2	-4
1000 HZ					5	2	-2	-4	0	4
2000 HZ					-3	-4	-4	-7	-6	-5
3000 HZ					-4	-5	-6	6	-6	-8
4000 HZ					-6	-7	-6	-7	-6	-7
6000 HZ					2	5	-2	3	-4	2
HTL POST(2),LEFT:										
3000 HZ					-3	-4	-5	-5	-4	-4
4000 HZ					-5	-1	-7	-7	-6	-4
HTL POST(2),RIGHT:										
3000 HZ					-4	-4	-3	-6	-7	-5
4000 HZ					-6	-5	-7	-7	-7	-2
HTL POST(30),LEFT:										
500 HZ					11	4	1	-2	-1	0
1000 HZ					2	2	-3	-2	-1	5
2000 HZ					3	0	-2	-5	-1	5
3000 HZ					-3	-4	-6	-7	-4	-5
4000 HZ					-5	-5	-7	-7	-6	-4
6000 HZ					13	1	8	0	6	12
HTL POST(30),RIGHT:										
500 HZ					5	2	-3	-3	-2	-3
1000 HZ					3	5	2	-1	5	5
2000 HZ					-4	-7	-6	-7	-5	-5
3000 HZ					-4	-6	-6	-7	-6	-6
4000 HZ					-6	-6	-8	-7	-7	-6
6000 HZ					2	3	-2	0	-2	5

SUBJECT 12 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	1		3							
1000 HZ	-5		1							
2000 HZ	-6		2							
3000 HZ	-7		1							
4000 HZ	-6		-1							
6000 HZ	-4		5							
HTL PRE-TEST,LEFT:										
500 HZ	2		9							
1000 HZ	-7		5							
2000 HZ	-6		-2							
3000 HZ	8		9							
4000 HZ	1		-3							
6000 HZ	11		5							
HTL PRE-TEST,RIGHT:										
500 HZ	0		3							
1000 HZ	-5		2							
2000 HZ	-2		6							
3000 HZ	-7		1							
4000 HZ	-1		-2							
6000 HZ	-1		1							
HTL POST(2),LEFT:										
3000 HZ	12		25							
4000 HZ	2		11							
HTL POST(2),RIGHT:										
3000 HZ	-5		1							
4000 HZ	-1		-1							
HTL POST(30),LEFT:										
500 HZ	3		5							
1000 HZ	-6		-7							
2000 HZ	-7		-7							
3000 HZ	4		4							
4000 HZ	1		0							
6000 HZ	10		8							
HTL POST(30),RIGHT:										
500 HZ	1		-2							
1000 HZ	0		-5							
2000 HZ	0		-2							
3000 HZ	-8		-8							
4000 HZ	-1		0							
6000 HZ	-2		-6							

SUBJECT 13 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					0	14	-2	0	4	8
1000 HZ					-2	6	-2	-3	2	3
2000 HZ					4	4	-4	-2	1	-1
3000 HZ					-1	2	-8	0	-1	-8
4000 HZ					5	4	-5	10	3	0
6000 HZ					11	12	19	22	13	8
HTL PRE-TEST,LEFT:										
500 HZ					3	12	6	4	2	6
1000 HZ					4	10	-1	5	6	0
2000 HZ					3	4	1	5	2	0
3000 HZ					-5	-4	-2	-5	-7	-10
4000 HZ					-1	6	1	7	1	-1
6000 HZ					12	19	10	17	14	21
HTL PRE-TEST,RIGHT:										
500 HZ					7	12	-2	6	7	6
1000 HZ					2	6	-2	0	2	3
2000 HZ					2	3	-4	0	1	-3
3000 HZ					3	2	-8	1	-1	-8
4000 HZ					4	2	-4	10	3	0
6000 HZ					9	14	20	23	18	20
HTL POST(2),LEFT:										
3000 HZ					-6	-5	0	-5	-8	1
4000 HZ					4	-6	1	10	3	-1
HTL POST(2),RIGHT:										
3000 HZ					3	11	-8	1	1	-8
4000 HZ					5	6	3	3	2	2
HTL POST(30),LEFT:										
500 HZ					6	2	13	1	1	4
1000 HZ					3	-1	2	2	5	5
2000 HZ					3	-5	-4	-1	-1	-3
3000 HZ					-6	-7	-4	-4	-4	0
4000 HZ					6	5	0	5	3	2
6000 HZ					26	21	12	26	21	22
HTL POST(30),RIGHT:										
500 HZ					4	12	-1	13	7	9
1000 HZ					-5	4	-3	3	1	0
2000 HZ					0	3	-4	1	1	-1
3000 HZ					-4	7	-8	3	-1	-4
4000 HZ					-5	-1	0	11	-5	0
6000 HZ					11	13	21	20	18	23

SUBJECT 14 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-2		0							
1000 HZ	0		1							
2000 HZ	2		-1							
3000 HZ	5		5							
4000 HZ	-1		3							
6000 HZ	3		5							
HTL PRE-TEST,LEFT:										
500 HZ	-1		1							
1000 HZ	0		1							
2000 HZ	-8		0							
3000 HZ	9		9							
4000 HZ	9		-4							
6000 HZ	1		6							
HTL PRE-TEST,RIGHT:										
500 HZ	-1		4							
1000 HZ	7		2							
2000 HZ	1		-2							
3000 HZ	10		9							
4000 HZ	7		4							
6000 HZ	3		14							
HTL POST(2),LEFT:										
3000 HZ	8		6							
4000 HZ	9		-1							
HTL POST(2),RIGHT:										
3000 HZ	8		9							
4000 HZ	8		7							
HTL POST(30),LEFT:										
500 HZ	-2		-7							
1000 HZ	-4		-5							
2000 HZ	-8		-9							
3000 HZ	7		1							
4000 HZ	8		-2							
6000 HZ	2		-2							
HTL POST(30),RIGHT:										
500 HZ	-1		-6							
1000 HZ	2		1							
2000 HZ	0		-5							
3000 HZ	-2		4							
4000 HZ	0		1							
6000 HZ	3		10							

SUBJECT 15 FEMALE 18 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	7		8							
1000 HZ	3		1							
2000 HZ	17		9							
3000 HZ	9		1							
4000 HZ	0		-5							
6000 HZ	15		-2							
HTL PRE-TEST,LEFT:										
500 HZ	3		3							
1000 HZ	6		1							
2000 HZ	8		4							
3000 HZ	1		-3							
4000 HZ	-3		-3							
6000 HZ	3		3							
HTL PRE-TEST,RIGHT:										
500 HZ	4		2							
1000 HZ	3		1							
2000 HZ	21		14							
3000 HZ	8		1							
4000 HZ	-1		-5							
6000 HZ	13		-2							
HTL POST(2),LEFT:										
3000 HZ	7		-1							
4000 HZ	-3		-2							
HTL POST(2),RIGHT:										
3000 HZ	9		-3							
4000 HZ	-5		-5							
HTL POST(30),LEFT:										
500 HZ	-1		0							
1000 HZ	-5		-2							
2000 HZ	-4		0							
3000 HZ	-6		-5							
4000 HZ	-5		-5							
6000 HZ	-1		4							
HTL POST(30),RIGHT:										
500 HZ	-4		3							
1000 HZ	-4		4							
2000 HZ	16		23							
3000 HZ	-2		7							
4000 HZ	-7		-6							
6000 HZ	-4		0							

SUBJECT 16 MALE 21 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		-3		-5						
1000 HZ		-4		0						
2000 HZ		-5		-3						
3000 HZ		0		0						
4000 HZ		-8		-6						
6000 HZ		-4		4						
HTL PRE-TEST,LEFT:										
500 HZ		-1		5						
1000 HZ		-8		-4						
2000 HZ		-7		-4						
3000 HZ		-6		-3						
4000 HZ		6		-2						
6000 HZ		-4		2						
HTL PRE-TEST,RIGHT:										
500 HZ		-3		-3						
1000 HZ		-6		-5						
2000 HZ		-5		-5						
3000 HZ		0		0						
4000 HZ		-8		-6						
6000 HZ		-5		1						
HTL POST(2),LEFT:										
3000 HZ		2		3						
4000 HZ		-3		0						
HTL POST(2),RIGHT:										
3000 HZ		-1		1						
4000 HZ		-2		-4						
HTL POST(30),LEFT:										
500 HZ		-1		7						
1000 HZ		-7		-5						
2000 HZ		-1		-4						
3000 HZ		1		-5						
4000 HZ		3		-3						
6000 HZ		-2		10						
HTL POST(30),RIGHT:										
500 HZ		2		-5						
1000 HZ		-5		-7						
2000 HZ		-6		-6						
3000 HZ		0		-4						
4000 HZ		-4		-6						
6000 HZ		9		6						

SUBJECT 17 MALE 23 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	3		-3							
1000 HZ	-2		-5							
2000 HZ	-1		-4							
3000 HZ	1		0							
4000 HZ	1		-3							
6000 HZ	-5		3							
HTL PRE-TEST,LEFT:										
500 HZ	1		-1							
1000 HZ	-2		-4							
2000 HZ	-1		3							
3000 HZ	2		-4							
4000 HZ	11		15							
6000 HZ	9		9							
HTL PRE-TEST,RIGHT:										
500 HZ	1		1							
1000 HZ	-3		-5							
2000 HZ	-4		-4							
3000 HZ	-1		1							
4000 HZ	-1		-4							
6000 HZ	-5		4							
HTL POST(2),LEFT:										
3000 HZ	3		3							
4000 HZ	13		19							
HTL POST(2),RIGHT:										
3000 HZ	1		4							
4000 HZ	6		6							
HTL POST(30),LEFT:										
500 HZ	0		1							
1000 HZ	-3		-2							
2000 HZ	-3		4							
3000 HZ	0		2							
4000 HZ	10		20							
6000 HZ	10		11							
HTL POST(30),RIGHT:										
500 HZ	-1		1							
1000 HZ	-3		-2							
2000 HZ	-4		-3							
3000 HZ	1		4							
4000 HZ	1		1							
6000 HZ	11		6							

SUBJECT 18 MALE 19 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		4		6						
1000 HZ		-5		1						
2000 HZ		-4		-5						
3000 HZ		-1		1						
4000 HZ		1		3						
6000 HZ		13		4						
HTL PRE-TEST,LEFT:										
500 HZ		9		6						
1000 HZ		-1		1						
2000 HZ		-1		0						
3000 HZ		2		0						
4000 HZ		3		0						
6000 HZ		6		10						
HTL PRE-TEST,RIGHT:										
500 HZ		4		2						
1000 HZ		-4		-3						
2000 HZ		14		-2						
3000 HZ		4		0						
4000 HZ		3		1						
6000 HZ		14		7						
HTL POST(2),LEFT:										
3000 HZ		3		7						
4000 HZ		1		10						
HTL POST(2),RIGHT:										
3000 HZ		-2		11						
4000 HZ		2		7						
HTL POST(30),LEFT:										
500 HZ		3		6						
1000 HZ		0		0						
2000 HZ		-2		-3						
3000 HZ		2		6						
4000 HZ		1		6						
6000 HZ		9		10						
HTL POST(30),RIGHT:										
500 HZ		2		2						
1000 HZ		-3		-2						
2000 HZ		1		0						
3000 HZ		-2		4						
4000 HZ		3		1						
6000 HZ		7		12						

SUBJECT 19 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	9		10							
1000 HZ	1		2							
2000 HZ	1		5							
3000 HZ	3		3							
4000 HZ	0		0							
6000 HZ	13		16							
HTL PRE-TEST,LEFT:										
500 HZ	4		13							
1000 HZ	3		5							
2000 HZ	6		10							
3000 HZ	2		4							
4000 HZ	-5		-1							
6000 HZ	15		14							
HTL PRE-TEST,RIGHT:										
500 HZ	8		13							
1000 HZ	2		8							
2000 HZ	2		9							
3000 HZ	3		5							
4000 HZ	1		7							
6000 HZ	11		18							
HTL POST(2),LEFT:										
3000 HZ	5		3							
4000 HZ	-5		0							
HTL POST(2),RIGHT:										
3000 HZ	6		10							
4000 HZ	3		2							
HTL POST(30),LEFT:										
500 HZ	10		10							
1000 HZ	5		-2							
2000 HZ	9		9							
3000 HZ	10		3							
4000 HZ	-1		0							
6000 HZ	19		25							
HTL POST(30),RIGHT:										
500 HZ	12		10							
1000 HZ	8		12							
2000 HZ	6		7							
3000 HZ	7		8							
4000 HZ	6		13							
6000 HZ	14		23							

SUBJECT 20 MALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-2	-4	6	-3						
1000 HZ	-8	-5	-4	0						
2000 HZ	-6	-3	-6	1						
3000 HZ	-8	-5	4	-1						
4000 HZ	-9	-7	-2	-3						
6000 HZ	-5	-10	9	2						
HTL PRE-TEST,LEFT:										
500 HZ	-7	-3	-4	-1						
1000 HZ	-8	-6	-6	-4						
2000 HZ	-4	-7	15	-10						
3000 HZ	-5	-4	15	-2						
4000 HZ	-8	-6	6	-4						
6000 HZ	6	8	4	3						
HTL PRE-TEST,RIGHT:										
500 HZ	6	-7	11	-10						
1000 HZ	6	4	0	0						
2000 HZ	18	-4	-2	7						
3000 HZ	3	-5	-9	-2						
4000 HZ	-5	-6	-7	-3						
6000 HZ	-2	14	-2	5						
HTL POST(2),LEFT:										
3000 HZ	-1	10	14	15						
4000 HZ	-8	0	16	8						
HTL POST(2),RIGHT:										
3000 HZ	-9	3	9	0						
4000 HZ	0	-1	1	10						
HTL POST(30),LEFT:										
500 HZ	-6	-4	2	-3						
1000 HZ	-7	-10	-1	-10						
2000 HZ	-5	-9	-3	-10						
3000 HZ	-2	-6	-4	-10						
4000 HZ	-2	-5	-4	-8						
6000 HZ	-6	-8	-2	3						
HTL POST(30),RIGHT:										
500 HZ	-7	-7	-1	-10						
1000 HZ	-7	-9	3	-10						
2000 HZ	-9	-9	-2	-7						
3000 HZ	-8	2	-1	-5						
4000 HZ	-8	-10	1	-10						
6000 HZ	-9	-10	1	-8						

SUBJECT 21 FEMALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-3		-2						
1000 HZ		-5		-1						
2000 HZ		-5		-3						
3000 HZ		0		8						
4000 HZ		-1		-1						
6000 HZ		6		8						
HTL PRE-TEST,LEFT:										
500 HZ		-3		-4						
1000 HZ		0		1						
2000 HZ		-2		4						
3000 HZ		-6		-4						
4000 HZ		-10		-6						
6000 HZ		0		14						
HTL PRE-TEST,RIGHT:										
500 HZ		-3		-4						
1000 HZ		-5		-4						
2000 HZ		-5		-4						
3000 HZ		1		3						
4000 HZ		-4		-6						
6000 HZ		6		7						
HTL POST(2),LEFT:										
3000 HZ		1		-5						
4000 HZ		-5		-1						
HTL POST(2),RIGHT:										
3000 HZ		9		-1						
4000 HZ		1		-5						
HTL POST(30),LEFT:										
500 HZ		-1		-2						
1000 HZ		2		0						
2000 HZ		-2		-1						
3000 HZ		-4		-4						
4000 HZ		-7		-6						
6000 HZ		3		17						
HTL POST(30),RIGHT:										
500 HZ		-4		-4						
1000 HZ		-5		-3						
2000 HZ		-5		-5						
3000 HZ		-5		-1						
4000 HZ		-6		-5						
6000 HZ		13		5						

SUBJECT 22 MALE 22 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	4		7							
1000 HZ	0		1							
2000 HZ	-5		-4							
3000 HZ	-6		-6							
4000 HZ	-5		-5							
6000 HZ	5		8							
HTL PRE-TEST,LEFT:										
500 HZ	3		3							
1000 HZ	-1		1							
2000 HZ	-1		-3							
3000 HZ	1		-2							
4000 HZ	1		-5							
6000 HZ	-1		9							
HTL PRE-TEST,RIGHT:										
500 HZ	3		4							
1000 HZ	-1		-1							
2000 HZ	-5		-7							
3000 HZ	-7		-6							
4000 HZ	-7		-5							
6000 HZ	-1		3							
HTL POST(2),LEFT:										
3000 HZ	5		5							
4000 HZ	1		5							
HTL POST(2),RIGHT:										
3000 HZ	-4		-1							
4000 HZ	-7		-3							
HTL POST(30),LEFT:										
500 HZ	5		1							
1000 HZ	2		-2							
2000 HZ	-2		-3							
3000 HZ	0		-1							
4000 HZ	-1		-6							
6000 HZ	3		7							
HTL POST(30),RIGHT:										
500 HZ	0		-1							
1000 HZ	1		2							
2000 HZ	-2		-5							
3000 HZ	-5		-6							
4000 HZ	-5		-8							
6000 HZ	5		6							

SUBJECT 23 MALE 23 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					-6	-8	6	1	14	12
1000 HZ					-5	-7	3	1	9	4
2000 HZ					-6	-6	-6	0	9	4
3000 HZ					-8	-8	-5	-3	1	-1
4000 HZ					-9	-9	1	-3	7	0
6000 HZ					-5	-6	-4	-6	-1	-2
HTL PRE-TEST,LEFT:										
500 HZ					0	-4	1	7	15	17
1000 HZ					-2	-1	-1	18	11	8
2000 HZ					-5	-6	-4	1	9	2
3000 HZ					-7	-7	-4	0	7	-2
4000 HZ					-7	-6	-6	0	8	3
6000 HZ					-4	-5	9	1	1	7
HTL PRE-TEST,RIGHT:										
500 HZ					-4	-5	3	-2	12	8
1000 HZ					-5	-6	-1	1	11	6
2000 HZ					-6	-9	-7	0	10	2
3000 HZ					-9	-10	-4	-3	8	0
4000 HZ					-8	-6	-1	-1	8	0
6000 HZ					-4	0	-4	-3	1	-2
HTL POST(2),LEFT:										
3000 HZ					-7	-7	1	10	8	-2
4000 HZ					-4	-5	1	4	8	2
HTL POST(2),RIGHT:										
3000 HZ					-7	-7	-2	1	0	2
4000 HZ					-9	-8	-2	4	0	2
HTL POST(30),LEFT:										
500 HZ					0	6	12	22	23	18
1000 HZ					0	3	11	9	20	9
2000 HZ					-6	-5	3	1	3	3
3000 HZ					-5	-4	-2	1	1	2
4000 HZ					-8	-5	2	1	3	2
6000 HZ					0	-4	2	3	3	2
HTL POST(30),RIGHT:										
500 HZ					-4	-5	-1	10	10	10
1000 HZ					-5	-4	2	9	11	0
2000 HZ					-5	-5	1	9	4	3
3000 HZ					-9	-6	-6	0	5	0
4000 HZ					-9	-9	-3	2	1	0
6000 HZ					-5	-5	1	1	6	3

SUBJECT 24 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					2	6	10	11	4	15
1000 HZ					-1	-4	7	5	4	9
2000 HZ					-6	-5	0	-2	2	-2
3000 HZ					-4	-5	-1	-3	5	-2
4000 HZ					-5	-5	-3	-4	1	-2
6000 HZ					7	12	30	22	12	20
HTL PRE-TEST,LEFT:										
500 HZ					-2	1	4	7	7	8
1000 HZ					-4	3	4	4	8	6
2000 HZ					-5	0	1	3	4	7
3000 HZ					-4	-1	-5	-5	-5	2
4000 HZ					-5	-5	-4	-5	-3	-2
6000 HZ					4	17	12	17	18	14
HTL PRE-TEST,RIGHT:										
500 HZ					-1	2	7	8	13	15
1000 HZ					-2	3	7	8	11	7
2000 HZ					-6	-5	0	-3	4	-3
3000 HZ					-4	-4	0	-3	1	-3
4000 HZ					-5	-5	-3	-4	-5	-2
6000 HZ					4	15	25	22	21	20
HTL POST(2),LEFT:										
3000 HZ					-3	2	1	-5	-2	3
4000 HZ					-5	-4	0	-3	-6	1
HTL POST(2),RIGHT:										
3000 HZ					-3	-2	-1	3	3	4
4000 HZ					-5	4	-5	0	-2	3
HTL POST(30),LEFT:										
500 HZ					-3	5	5	8	7	7
1000 HZ					-5	5	4	9	4	6
2000 HZ					-5	-5	0	1	0	1
3000 HZ					-6	-3	1	-5	-6	-1
4000 HZ					-6	-4	-5	0	-6	-7
6000 HZ					5	17	13	23	13	11
HTL POST(30),RIGHT:										
500 HZ					-4	2	2	11	12	11
1000 HZ					-3	6	3	3	11	8
2000 HZ					-6	-3	-6	2	2	-2
3000 HZ					-6	-2	-1	3	-2	-1
4000 HZ					-6	1	-3	2	-3	-1
6000 HZ					-5	14	-6	26	12	11

SUBJECT 25 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	6		-2							
1000 HZ	-4		-5							
2000 HZ	-4		-5							
3000 HZ	-6		-4							
4000 HZ	-4		-1							
6000 HZ	-5		-1							
HTL PRE-TEST,LEFT:										
500 HZ	-4		-3							
1000 HZ	-7		-6							
2000 HZ	-9		-9							
3000 HZ	-4		-4							
4000 HZ	-6		-3							
6000 HZ	-4		-1							
HTL PRE-TEST,RIGHT:										
500 HZ	-3		-6							
1000 HZ	-6		-7							
2000 HZ	-6		-8							
3000 HZ	-2		-1							
4000 HZ	-3		2							
6000 HZ	-2		4							
HTL POST(2),LEFT:										
3000 HZ	-3		5							
4000 HZ	-2		-4							
HTL POST(2),RIGHT:										
3000 HZ	-4		-3							
4000 HZ	-4		5							
HTL POST(30),LEFT:										
500 HZ	-4		-1							
1000 HZ	-7		-6							
2000 HZ	-9		-8							
3000 HZ	-7		-6							
4000 HZ	-6		-3							
6000 HZ	-5		0							
HTL POST(30),RIGHT:										
500 HZ	-4		-1							
1000 HZ	-8		-6							
2000 HZ	-8		-5							
3000 HZ	-6		-3							
4000 HZ	-4		-4							
6000 HZ	-1		6							

SUBJECT 26 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		1		1						
1000 HZ		-5		-6						
2000 HZ		-4		-10						
3000 HZ		-6		-10						
4000 HZ		-5		-4						
6000 HZ		12		6						
HTL PRE-TEST,LEFT:										
500 HZ		5		5						
1000 HZ		-4		-5						
2000 HZ		-2		-4						
3000 HZ		3		1						
4000 HZ		6		0						
6000 HZ		-7		12						
HTL PRE-TEST,RIGHT:										
500 HZ		1		0						
1000 HZ		-5		-4						
2000 HZ		-3		-2						
3000 HZ		-8		-7						
4000 HZ		-5		-1						
6000 HZ		18		7						
HTL POST(2),LEFT:										
3000 HZ		2		11						
4000 HZ		6		3						
HTL POST(2),RIGHT:										
3000 HZ		-4		-7						
4000 HZ		-6		-2						
HTL POST(30),LEFT:										
500 HZ		3		-4						
1000 HZ		-7		-6						
2000 HZ		-4		-5						
3000 HZ		-1		-2						
4000 HZ		0		2						
6000 HZ		22		23						
HTL POST(30),RIGHT:										
500 HZ		-3		8						
1000 HZ		-6		-5						
2000 HZ		-2		-5						
3000 HZ		-6		-5						
4000 HZ		-5		-4						
6000 HZ		11		18						

SUBJECT 27 MALE 21 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		10		5	5	0	-1	4	3	1
1000 HZ		3		3	-1	-5	-5	-2	-2	-1
2000 HZ		-3		-5	-1	-4	-2	-1	-2	-5
3000 HZ		-4		-5	-4	-8	-6	-3	-5	-3
4000 HZ		1		-4	-2	-5	-5	-1	-2	-2
6000 HZ		10		9	8	5	6	8	11	-9
HTL PRE-TEST,LEFT:										
500 HZ		8		3	-4	-1	-4	4	0	0
1000 HZ		-2		-4	-5	-5	-6	-2	-3	-3
2000 HZ		3		-5	-6	-6	-6	-4	-5	-3
3000 HZ		-3		-6	-4	-3	-5	4	-3	-4
4000 HZ		1		-6	4	-2	1	1	2	-4
6000 HZ		13		9	4	8	1	4	0	1
HTL PRE-TEST,RIGHT:										
500 HZ		10		1	-3	0	0	1	-3	1
1000 HZ		3		2	-6	-5	-5	-3	-3	-2
2000 HZ		-2		-5	-5	-2	-4	-1	-2	-3
3000 HZ		-3		-5	-5	-8	-5	-3	-5	-3
4000 HZ		3		-3	-1	-5	-2	-1	-3	-7
6000 HZ		6		9	5	4	5	9	10	-9
HTL POST(2),LEFT:										
3000 HZ		2		1	1	-2	-5	4	-2	-2
4000 HZ		6		6	5	-2	-2	3	3	-4
HTL POST(2),RIGHT:										
3000 HZ		4		4	-5	-6	-5	-2	-4	-3
4000 HZ		9		6	-1	-4	-7	2	0	-3
HTL POST(30),LEFT:										
500 HZ		15		5	-2	1	3	1	2	2
1000 HZ		3		0	-5	-6	-8	-4	-3	-5
2000 HZ		3		-1	-5	-5	-5	-3	-4	-5
3000 HZ		1		-4	-1	1	-5	3	-3	-4
4000 HZ		6		0	6	0	5	7	3	-3
6000 HZ		8		6	2	6	1	3	3	4
HTL POST(30),RIGHT:										
500 HZ		9		1	-2	-4	1	-2	6	-1
1000 HZ		6		2	-5	-3	-5	1	-4	-2
2000 HZ		2		-7	-2	-2	-4	-1	-3	-3
3000 HZ		0		-3	-4	-4	-4	-6	-4	-6
4000 HZ		2		-2	1	-4	-6	-3	-2	-4
6000 HZ		12		18	7	7	-5	6	-10	9

SUBJECT 28 FEMALE 19 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					3	19	18	15	2	11
1000 HZ					1	8	16	12	8	13
2000 HZ					-9	0	9	3	1	7
3000 HZ					-7	2	7	2	-2	2
4000 HZ					-9	-2	4	4	1	-3
6000 HZ					-1	6	10	5	6	10
HTL PRE-TEST,LEFT:										
500 HZ					-2	11	15	14	1	10
1000 HZ					8	7	16	16	10	11
2000 HZ					-8	5	6	4	-3	2
3000 HZ					-6	1	5	2	-2	4
4000 HZ					-9	-2	5	1	-5	2
6000 HZ					-4	11	17	13	20	23
HTL PRE-TEST,RIGHT:										
500 HZ					1	15	18	16	8	13
1000 HZ					2	10	17	14	13	11
2000 HZ					-5	5	10	3	1	5
3000 HZ					-9	5	6	2	-1	1
4000 HZ					-9	-3	3	3	-3	-4
6000 HZ					-1	8	10	6	5	10
HTL POST(2),LEFT:										
3000 HZ					-1	3	7	4	1	7
4000 HZ					-9	-5	4	2	-3	3
HTL POST(2),RIGHT:										
3000 HZ					-9	8	5	4	1	4
4000 HZ					-10	2	3	2	-6	1
HTL POST(30),LEFT:										
500 HZ					-1	15	15	7	3	13
1000 HZ					1	16	19	13	7	18
2000 HZ					-7	4	11	3	1	5
3000 HZ					-8	2	7	4	1	1
4000 HZ					-9	-5	4	-2	-6	1
6000 HZ					3	23	19	20	22	23
HTL POST(30),RIGHT:										
500 HZ					-4	14	23	14	4	11
1000 HZ					3	12	16	13	9	15
2000 HZ					-6	5	5	7	2	6
3000 HZ					-8	1	2	3	1	4
4000 HZ					-9	-2	2	-2	-7	2
6000 HZ					-6	12	11	-5	10	12

SUBJECT 29 MALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	6	-1	1	-1						
1000 HZ	-2	-6	-6	-4						
2000 HZ	-3	-7	-7	-7						
3000 HZ	0	1	1	3						
4000 HZ	-2	-5	-1	-4						
6000 HZ	-3	-4	-1	-5						
HTL PRE-TEST,LEFT:										
500 HZ	4	-2	2	4						
1000 HZ	0	-4	-2	-4						
2000 HZ	-8	-9	-6	-7						
3000 HZ	-6	-6	-4	-4						
4000 HZ	0	1	-1	1						
6000 HZ	-6	-6	-3	-4						
HTL PRE-TEST,RIGHT:										
500 HZ	3	-1	4	-2						
1000 HZ	-3	-6	-4	-4						
2000 HZ	-4	-5	-4	-4						
3000 HZ	0	2	1	5						
4000 HZ	-2	-3	-1	3						
6000 HZ	-1	-2	-1	-3						
HTL POST(2),LEFT:										
3000 HZ	-3	-6	11	-2						
4000 HZ	2	1	4	5						
HTL POST(2),RIGHT:										
3000 HZ	3	1	5	8						
4000 HZ	0	-1	-1	4						
HTL POST(30),LEFT:										
500 HZ	4	-1	4	-3						
1000 HZ	1	-4	-1	-5						
2000 HZ	-9	-9	-7	-7						
3000 HZ	-4	-8	-4	-1						
4000 HZ	3	-2	3	5						
6000 HZ	1	-6	-2	4						
HTL POST(30),RIGHT:										
500 HZ	4	0	2	7						
1000 HZ	-4	-6	-4	0						
2000 HZ	-5	-5	-4	0						
3000 HZ	2	0	2	8						
4000 HZ	-2	-4	-2	2						
6000 HZ	1	-4	-4	1						

SUBJECT 30 MALE 24 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	2		3							
1000 HZ	-1		-3							
2000 HZ	-3		-4							
3000 HZ	-5		-1							
4000 HZ	-1		-4							
6000 HZ	2		15							
HTL PRE-TEST,LEFT:										
500 HZ	3		5							
1000 HZ	8		6							
2000 HZ	0		-4							
3000 HZ	2		-2							
4000 HZ	-2		-1							
6000 HZ	17		9							
HTL PRE-TEST,RIGHT:										
500 HZ	9		3							
1000 HZ	0		-3							
2000 HZ	-3		-4							
3000 HZ	-3		1							
4000 HZ	1		-4							
6000 HZ	6		16							
HTL POST(2),LEFT:										
3000 HZ	4		11							
4000 HZ	1		4							
HTL POST(2),RIGHT:										
3000 HZ	-1		-3							
4000 HZ	1		2							
HTL POST(30),LEFT:										
500 HZ	7		2							
1000 HZ	6		6							
2000 HZ	-1		1							
3000 HZ	-3		0							
4000 HZ	2		-1							
6000 HZ	13		20							
HTL POST(30),RIGHT:										
500 HZ	4		4							
1000 HZ	-3		0							
2000 HZ	-1		-3							
3000 HZ	-4		-1							
4000 HZ	-1		2							
6000 HZ	15		16							

SUBJECT 31 FEMALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	5		8							
1000 HZ	1		10							
2000 HZ	-6		1							
3000 HZ	-7		1							
4000 HZ	-4		-2							
6000 HZ	-4		1							
HTL PRE-TEST,LEFT:										
500 HZ	-1		4							
1000 HZ	-4		3							
2000 HZ	2		6							
3000 HZ	-5		-2							
4000 HZ	-5		-3							
6000 HZ	-5		1							
HTL PRE-TEST,RIGHT:										
500 HZ	2		8							
1000 HZ	3		7							
2000 HZ	-5		2							
3000 HZ	0		-4							
4000 HZ	-7		-4							
6000 HZ	-5		5							
HTL POST(2),LEFT:										
3000 HZ	-5		16							
4000 HZ	-9		11							
HTL POST(2),RIGHT:										
3000 HZ	-4		12							
4000 HZ	-5		18							
HTL POST(30),LEFT:										
500 HZ	3		6							
1000 HZ	-6		0							
2000 HZ	4		4							
3000 HZ	-3		-3							
4000 HZ	-8		-8							
6000 HZ	-4		-3							
HTL POST(30),RIGHT:										
500 HZ	-3		2							
1000 HZ	-4		4							
2000 HZ	-8		1							
3000 HZ	-7		-1							
4000 HZ	-7		-1							
6000 HZ	-6		-4							

SUBJECT 32 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					4	-7	-5	9	7	7
1000 HZ					-5	-8	-8	-7	0	-8
2000 HZ					-5	-8	-5	-3	0	-6
3000 HZ					-4	-7	-5	-3	1	-4
4000 HZ					-2	-5	-1	8	4	0
6000 HZ					-1	-4	-3	2	10	2
HTL PRE-TEST,LEFT:										
500 HZ					-6	-6	-1	6	6	0
1000 HZ					0	-4	-7	-3	5	0
2000 HZ					-1	-8	-8	-4	-4	-6
3000 HZ					-6	-8	-7	-3	1	-7
4000 HZ					-10	-7	-7	-3	4	-4
6000 HZ					0	-4	-2	-2	2	-4
HTL PRE-TEST,RIGHT:										
500 HZ					3	-3	0	9	8	8
1000 HZ					-9	-10	-7	-7	-1	-7
2000 HZ					-9	-3	-3	-4	-1	-6
3000 HZ					-8	-6	-2	-3	1	-4
4000 HZ					-5	-4	0	5	5	-1
6000 HZ					-6	-3	-1	2	11	2
HTL POST(2),LEFT:										
3000 HZ					-6	-7	-6	-3	2	-7
4000 HZ					-8	-8	-7	-5	4	-5
HTL POST(2),RIGHT:										
3000 HZ					1	-6	-2	-3	1	-6
4000 HZ					-5	-5	-2	4	5	-2
HTL POST(30),LEFT:										
500 HZ					-7	-7	-6	3	6	0
1000 HZ					-6	-6	-8	-4	5	0
2000 HZ					-6	-8	-8	-6	-4	-7
3000 HZ					-8	-8	-8	-5	1	-7
4000 HZ					-7	-7	-7	-3	4	-5
6000 HZ					-4	-8	-4	0	2	0
HTL POST(30),RIGHT:										
500 HZ					2	-6	-4	8	8	3
1000 HZ					-8	-8	-9	-5	-1	-7
2000 HZ					-8	-9	-8	-5	-1	-3
3000 HZ					-9	-6	-5	-4	1	-6
4000 HZ					-6	-4	-3	4	5	-1
6000 HZ					3	-5	-5	5	11	1

SUBJECT 33 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					0	3	-4	-3	-5	-3
1000 HZ					-4	-4	-8	-7	-9	-9
2000 HZ					-2	-2	-4	-4	-9	-8
3000 HZ					5	-1	-5	-4	-6	-7
4000 HZ					-7	-7	-7	-9	-9	-9
6000 HZ					-5	-5	-6	-6	-9	-9
HTL PRE-TEST,LEFT:										
500 HZ					5	-1	4	-2	-5	-1
1000 HZ					-3	-6	-5	-7	-9	-8
2000 HZ					-4	-1	-4	-3	-8	-7
3000 HZ					2	-1	2	-1	-4	-3
4000 HZ					6	0	-2	-3	-4	-4
6000 HZ					24	7	23	10	8	15
HTL PRE-TEST,RIGHT:										
500 HZ					2	4	2	3	-8	-3
1000 HZ					-5	-2	-6	-9	-9	-9
2000 HZ					-3	-3	-7	-7	-9	-9
3000 HZ					5	-1	-4	-4	-5	-7
4000 HZ					-8	-5	-9	-10	-9	-9
6000 HZ					-5	-4	-6	-8	-9	-9
HTL POST(2),LEFT:										
3000 HZ					4	8	-1	-2	-5	-3
4000 HZ					7	1	-2	-3	-5	-3
HTL POST(2),RIGHT:										
3000 HZ					2	7	-6	-6	-6	-5
4000 HZ					-6	-4	-8	-7	-9	-10
HTL POST(30),LEFT:										
500 HZ					6	-1	3	-4	-8	-4
1000 HZ					-2	-2	-5	-8	-9	-9
2000 HZ					-4	-3	-4	-2	-8	-6
3000 HZ					2	-4	-2	-2	-5	-4
4000 HZ					4	0	-3	-3	-6	-3
6000 HZ					28	16	23	19	11	15
HTL POST(30),RIGHT:										
500 HZ					4	0	-4	-7	-8	-5
1000 HZ					-6	-4	-9	-9	-9	-9
2000 HZ					0	-3	-8	-6	-9	-9
3000 HZ					5	-2	-5	-4	-5	-5
4000 HZ					-6	-4	-9	-8	-10	-9
6000 HZ					-4	0	-7	-6	-9	-9

SUBJECT 34 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-5	-5	-6	-3						
1000 HZ	-8	-7	-6	-7						
2000 HZ	-6	-7	-7	-6						
3000 HZ	-7	-7	-8	-10						
4000 HZ	-7	-8	-8	-8						
6000 HZ	-7	-8	-8	-5						
HTL PRE-TEST,LEFT:										
500 HZ	-1	0	1	2						
1000 HZ	-6	-1	-4	-4						
2000 HZ	-5	-2	-2	-5						
3000 HZ	-6	-5	-7	-7						
4000 HZ	-5	-6	-8	-6						
6000 HZ	-6	-7	-4	-7						
HTL PRE-TEST,RIGHT:										
500 HZ	-5	-5	-5	-4						
1000 HZ	-8	-7	-6	-10						
2000 HZ	-6	-6	-5	-10						
3000 HZ	-8	-7	-6	-10						
4000 HZ	-9	-8	-9	-10						
6000 HZ	-7	-8	-8	-10						
HTL POST(2),LEFT:										
3000 HZ	0	4	-6	-6						
4000 HZ	-7	6	-6	3						
HTL POST(2),RIGHT:										
3000 HZ	-8	-8	-8	-6						
4000 HZ	-9	-10	-7	-2						
HTL POST(30),LEFT:										
500 HZ	-5	-1	-4	-7						
1000 HZ	-6	-6	-5	-7						
2000 HZ	-4	-5	-7	-6						
3000 HZ	-7	-6	-6	-10						
4000 HZ	-8	-6	-6	-4						
6000 HZ	-7	-10	-6	-6						
HTL POST(30),RIGHT:										
500 HZ	-6	-6	-5	-5						
1000 HZ	-8	-7	-6	-7						
2000 HZ	-7	-10	-7	-8						
3000 HZ	-8	-10	-9	-10						
4000 HZ	-9	-10	-8	-10						
6000 HZ	-7	-10	-8	1						

SUBJECT 35 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					2	-4	-3	-2	10	20
1000 HZ					-3	-4	-5	-4	6	8
2000 HZ					-9	-9	-10	-10	-6	2
3000 HZ					-6	-9	-9	-10	0	2
4000 HZ					-7	-9	-9	-10	-1	1
6000 HZ					-5	6	-5	-4	2	-3
HTL PRE-TEST,LEFT:										
500 HZ					-1	-1	1	-3	9	13
1000 HZ					-7	-8	-8	-8	1	5
2000 HZ					-8	-8	-8	-9	-6	1
3000 HZ					-5	-5	-5	-8	-2	7
4000 HZ					-3	-6	-7	-8	-1	1
6000 HZ					4	2	2	0	7	15
HTL PRE-TEST,RIGHT:										
500 HZ					2	-2	-5	-3	9	15
1000 HZ					-3	-6	-7	-7	4	7
2000 HZ					-9	-9	-9	-9	-7	0
3000 HZ					-4	-9	-8	-9	0	2
4000 HZ					-7	-9	-9	-9	-1	1
6000 HZ					1	4	-4	-5	4	6
HTL POST(2),LEFT:										
3000 HZ					0	-2	-5	-6	4	18
4000 HZ					-4	-4	-5	-6	3	10
HTL POST(2),RIGHT:										
3000 HZ					-4	-5	-7	-6	1	8
4000 HZ					-7	-4	-9	-6	-4	11
HTL POST(30),LEFT:										
500 HZ					1	-4	-5	-3	12	15
1000 HZ					-7	-8	-7	-8	4	5
2000 HZ					-9	-8	-8	-9	-6	-2
3000 HZ					-4	-6	-8	-8	0	2
4000 HZ					-5	-6	-8	-8	2	7
6000 HZ					4	1	2	-1	2	9
HTL POST(30),RIGHT:										
500 HZ					2	-5	-6	-2	6	13
1000 HZ					-1	-7	-8	-7	2	8
2000 HZ					-9	-9	-8	-10	-8	2
3000 HZ					-4	-8	-9	-10	0	2
4000 HZ					-7	-8	-9	-8	-4	4
6000 HZ					6	-5	-5	-6	-1	6

SUBJECT 36 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		-2		-1						
1000 HZ		4		1						
2000 HZ		-1		4						
3000 HZ		7		8						
4000 HZ		21		19						
6000 HZ		9		5						
HTL PRE-TEST,LEFT:										
500 HZ		-5		1						
1000 HZ		-4		-4						
2000 HZ		11		13						
3000 HZ		4		9						
4000 HZ		10		16						
6000 HZ		4		1						
HTL PRE-TEST,RIGHT:										
500 HZ		3		1						
1000 HZ		6		3						
2000 HZ		1		7						
3000 HZ		3		9						
4000 HZ		18		19						
6000 HZ		9		5						
HTL POST(2),LEFT:										
3000 HZ		11		20						
4000 HZ		13		27						
HTL POST(2),RIGHT:										
3000 HZ		12		19						
4000 HZ		22		28						
HTL POST(30),LEFT:										
500 HZ		-3		-3						
1000 HZ		-6		-7						
2000 HZ		4		14						
3000 HZ		2		16						
4000 HZ		10		16						
6000 HZ		9		11						
HTL POST(30),RIGHT:										
500 HZ		4		8						
1000 HZ		3		5						
2000 HZ		1		7						
3000 HZ		5		9						
4000 HZ		19		20						
6000 HZ		13		15						

SUBJECT 37 MALE 19 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	5	2	1	4						
1000 HZ	-3	-1	-2	2						
2000 HZ	-8	-5	-6	-5						
3000 HZ	-9	-5	-7	-5						
4000 HZ	2	5	-2	0						
6000 HZ	0	0	-8	-5						
HTL PRE-TEST,LEFT:										
500 HZ	10	15	9	15						
1000 HZ	6	12	5	12						
2000 HZ	-7	-5	-7	-5						
3000 HZ	-9	-5	-7	-5						
4000 HZ	-4	3	-6	3						
6000 HZ	-7	-4	-3	-5						
HTL PRE-TEST,RIGHT:										
500 HZ	5	1	-1	6						
1000 HZ	-2	-5	-3	5						
2000 HZ	-8	-7	-6	-5						
3000 HZ	-8	-5	-7	2						
4000 HZ	4	3	2	2						
6000 HZ	-1	-1	-7	-7						
HTL POST(2),LEFT:										
3000 HZ	-5	-1	0	5						
4000 HZ	-1	1	4	15						
HTL POST(2),RIGHT:										
3000 HZ	-9	-2	9	-3						
4000 HZ	6	1	1	12						
HTL POST(30),LEFT:										
500 HZ	13	8	7	14						
1000 HZ	3	13	16	9						
2000 HZ	-7	-5	-5	-6						
3000 HZ	-6	-6	-3	-5						
4000 HZ	-1	4	-3	4						
6000 HZ	-8	1	6	-1						
HTL POST(30),RIGHT:										
500 HZ	3	4	6	6						
1000 HZ	-1	-2	4	7						
2000 HZ	-8	-5	-6	-6						
3000 HZ	-9	-2	-5	-4						
4000 HZ	4	9	13	11						
6000 HZ	-4	8	3	-3						

SUBJECT 38 MALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	7		4							
1000 HZ	1		1							
2000 HZ	2		-1							
3000 HZ	8		6							
4000 HZ	11		7							
6000 HZ	7		1							
HTL PRE-TEST,LEFT:										
500 HZ	9		8							
1000 HZ	7		4							
2000 HZ	6		2							
3000 HZ	9		8							
4000 HZ	10		7							
6000 HZ	19		10							
HTL PRE-TEST,RIGHT:										
500 HZ	4		7							
1000 HZ	5		11							
2000 HZ	6		-1							
3000 HZ	9		9							
4000 HZ	10		9							
6000 HZ	6		4							
HTL POST(2),LEFT:										
3000 HZ	11		12							
4000 HZ	12		-9							
HTL POST(2),RIGHT:										
3000 HZ	16		12							
4000 HZ	14		12							
HTL POST(30),LEFT:										
500 HZ	8		8							
1000 HZ	0		2							
2000 HZ	4		4							
3000 HZ	6		10							
4000 HZ	11		10							
6000 HZ	19		12							
HTL POST(30),RIGHT:										
500 HZ	7		8							
1000 HZ	5		6							
2000 HZ	7		8							
3000 HZ	10		8							
4000 HZ	11		11							
6000 HZ	9		9							

SUBJECT 39 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	-3	14	-5	15	-4	5	0	1	4	11
1000 HZ	-2	15	-5	7	-6	3	-3	-3	1	-2
2000 HZ	-6	6	-7	3	-8	-2	-4	-2	-7	-5
3000 HZ	-9	0	-8	1	-8	-2	-7	-7	-4	-4
4000 HZ	-4	3	-7	3	-9	-1	-3	-4	-1	-3
6000 HZ	-2	4	-1	4	-6	7	2	0	2	4
HTL PRE-TEST,LEFT:										
500 HZ	-3	15	-5	11	-7	17	5	0	1	6
1000 HZ	-4	8	-6	5	-7	-2	-3	-4	-1	-2
2000 HZ	-6	8	-8	1	-7	-2	-6	-7	-4	-5
3000 HZ	-5	6	-6	1	-7	0	-4	-6	-1	-4
4000 HZ	-4	11	-4	3	-5	5	0	0	0	2
6000 HZ	2	11	-6	1	-5	2	1	5	-3	2
HTL PRE-TEST,RIGHT:										
500 HZ	-4	9	-5	8	-5	3	2	-2	3	4
1000 HZ	-2	13	-6	2	-6	1	-4	-4	-2	-2
2000 HZ	-6	3	-7	1	-6	-5	-4	-5	-7	-6
3000 HZ	-6	4	-7	3	-6	-2	-6	-7	-5	-6
4000 HZ	-6	2	-6	2	-7	-4	-3	-5	-4	-3
6000 HZ	1	5	-3	10	-8	5	2	-1	5	5
HTL POST(2),LEFT:										
3000 HZ	-2	7	-3	8	-7	-1	-3	0	-2	-3
4000 HZ	-4	9	0	5	-6	5	-2	0	8	0
HTL POST(2),RIGHT:										
3000 HZ	-6	3	-7	-3	-7	2	-5	-6	-1	-4
4000 HZ	-7	6	-6	4	-9	1	-4	-4	-1	-2
HTL POST(30),LEFT:										
500 HZ	0	20	-5	13	-7	8	-2	0	3	3
1000 HZ	-6	-1	-5	2	4	2	-4	-5	-2	-2
2000 HZ	-8	0	-7	-1	-6	-2	-6	-6	-5	-3
3000 HZ	-5	0	-6	2	-5	1	-5	-5	-1	-3
4000 HZ	-1	1	-1	1	1	3	-2	-1	1	0
6000 HZ	-7	4	-6	0	-4	6	-1	8	7	10
HTL POST(30),RIGHT:										
500 HZ	-4	6	-5	4	-4	1	0	-2	2	2
1000 HZ	-4	5	-4	5	-4	-1	-5	-6	-2	1
2000 HZ	-7	-4	-7	0	-6	-3	-5	-8	-6	-4
3000 HZ	-7	-5	-8	3	-5	2	-5	-8	-4	-4
4000 HZ	-7	0	-6	12	-2	1	-4	-4	-2	-1
6000 HZ	-3	-1	-6	8	-1	5	5	5	0	2

SUBJECT 40 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	3		-1							
1000 HZ	1		-7							
2000 HZ	11		7							
3000 HZ	4		-6							
4000 HZ	1		-6							
6000 HZ	2		-3							
HTL PRE-TEST,LEFT:										
500 HZ	2		1							
1000 HZ	0		-6							
2000 HZ	-1		-4							
3000 HZ	1		-5							
4000 HZ	-3		-7							
6000 HZ	1		-8							
HTL PRE-TEST,RIGHT:										
500 HZ	2		-1							
1000 HZ	-2		-7							
2000 HZ	11		4							
3000 HZ	-4		1							
4000 HZ	-3		-4							
6000 HZ	0		3							
HTL POST(2),LEFT:										
3000 HZ	-3		1							
4000 HZ	-2		-3							
HTL POST(2),RIGHT:										
3000 HZ	0		0							
4000 HZ	1		0							
HTL POST(30),LEFT:										
500 HZ	-3		-1							
1000 HZ	0		-3							
2000 HZ	1		-3							
3000 HZ	1		-3							
4000 HZ	-5		9							
6000 HZ	-7		7							
HTL POST(30),RIGHT:										
500 HZ	-5		-5							
1000 HZ	-5		-8							
2000 HZ	6		-3							
3000 HZ	-1		-7							
4000 HZ	-3		-5							
6000 HZ	3		-3							

SUBJECT 41 MALE 21 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					-2	6	1	2	-1	5
1000 HZ					-4	-4	-3	-5	-5	-4
2000 HZ					1	-2	1	-1	-1	-2
3000 HZ					2	-4	-3	0	-2	-2
4000 HZ					0	-3	1	-1	-1	-3
6000 HZ					9	1	9	9	6	5
HTL PRE-TEST,LEFT:										
500 HZ					8	1	1	-1	2	2
1000 HZ					-1	-2	1	-1	-3	-6
2000 HZ					-3	-2	-5	-2	-3	-5
3000 HZ					2	-2	2	-2	-3	0
4000 HZ					1	3	-5	-3	0	-2
6000 HZ					6	0	11	7	1	4
HTL PRE-TEST,RIGHT:										
500 HZ					-2	1	-2	3	-1	1
1000 HZ					-5	-4	-2	-5	-5	-4
2000 HZ					1	-4	1	0	-1	-2
3000 HZ					1	-2	-2	-5	-2	-2
4000 HZ					1	-2	1	-1	-1	-4
6000 HZ					11	0	3	9	2	9
HTL POST(2),LEFT:										
3000 HZ					5	5	4	-1	1	3
4000 HZ					2	7	0	3	3	2
HTL POST(2),RIGHT:										
3000 HZ					1	-1	0	-3	0	0
4000 HZ					4	9	-1	2	0	-2
HTL POST(30),LEFT:										
500 HZ					14	9	5	6	2	0
1000 HZ					-2	-1	-2	-3	-4	-6
2000 HZ					-1	-2	-1	-4	-5	-5
3000 HZ					2	2	1	-2	-1	0
4000 HZ					4	2	1	4	-1	1
6000 HZ					10	6	11	.2	11	10
HTL POST(30),RIGHT:										
500 HZ					5	-1	2	2	6	3
1000 HZ					0	-5	-5	-5	-5	-3
2000 HZ					2	-4	0	-2	-2	-2
3000 HZ					2	-3	-1	-5	0	1
4000 HZ					3	0	-1	0	0	0
6000 HZ					12	10	10	8	6	10

SUBJECT 42 MALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-10	-4	-4	6	10	7
1000 HZ					-7	-8	-7	-5	1	2
2000 HZ					-4	-6	-5	1	3	4
3000 HZ					-8	-9	-9	-7	-1	-3
4000 HZ					-7	-9	-9	-2	3	-1
6000 HZ					4	-5	-5	2	11	12
HTL PRE-TEST,LEFT:										
500 HZ					-2	-5	-5	0	10	9
1000 HZ					-3	-8	-9	-4	2	2
2000 HZ					-2	-7	-9	-5	2	0
3000 HZ					-7	-8	-9	-5	2	-3
4000 HZ					-8	-9	-9	-6	0	-5
6000 HZ					-2	0	-4	4	20	12
HTL PRE-TEST,RIGHT:										
500 HZ					-4	-4	-6	4	8	6
1000 HZ					-2	-9	-8	-5	4	1
2000 HZ					-4	-6	-5	-2	8	3
3000 HZ					-6	-8	-9	-7	0	-4
4000 HZ					-8	-9	-9	-6	3	-3
6000 HZ					-5	-5	-2	2	6	10
HTL POST(2),LEFT:										
3000 HZ					-4	-9	-8	-3	1	5
4000 HZ					-8	-9	-9	-4	1	2
HTL POST(2),RIGHT:										
3000 HZ					-8	-9	-8	-7	-3	0
4000 HZ					-6	-9	-7	-6	4	1
HTL POST(30),LEFT:										
500 HZ					-2	-5	-8	3	11	4
1000 HZ					-6	-7	-9	-5	4	3
2000 HZ					-4	-5	-8	-5	4	0
3000 HZ					-4	-7	-8	-7	3	-3
4000 HZ					-6	-8	-9	-6	2	1
6000 HZ					-4	-1	2	1	15	5
HTL POST(30),RIGHT:										
500 HZ					-2	-7	7	2	9	6
1000 HZ					-3	-8	-9	-5	1	0
2000 HZ					-4	-4	-5	1	3	4
3000 HZ					-7	-9	-9	-7	-3	-6
4000 HZ					-7	-9	-10	-6	2	-1
6000 HZ					-4	-2	0	5	8	9

SUBJECT 43 MALE 19 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					22	21	15	20	16	24
1000 HZ					20	14	4	12	6	4
2000 HZ					11	7	-4	3	-5	-3
3000 HZ					12	6	0	3	-4	-3
4000 HZ					12	14	2	9	-3	0
6000 HZ					12	12	1	10	6	4
HTL PRE-TEST,LEFT:										
500 HZ					23	17	2	17	19	8
1000 HZ					15	11	1	10	5	3
2000 HZ					6	6	-5	5	-2	-5
3000 HZ					8	9	0	3	-1	0
4000 HZ					13	9	-1	4	-3	0
6000 HZ					14	9	2	9	2	1
HTL PRE-TEST,RIGHT:										
500 HZ					22	21	14	18	12	9
1000 HZ					18	14	7	11	4	2
2000 HZ					11	10	-4	3	-5	-5
3000 HZ					13	6	-4	2	-1	-3
4000 HZ					12	11	2	8	-3	0
6000 HZ					12	9	0	10	11	2
HTL POST(2),LEFT:										
3000 HZ					13	7	-2	5	3	-1
4000 HZ					9	9	-1	6	-3	-2
HTL POST(2),RIGHT:										
3000 HZ					8	9	-2	7	-2	0
4000 HZ					8	12	3	8	-4	2
HTL POST(30),LEFT:										
500 HZ					16	14	5	14	7	6
1000 HZ					10	8	-1	5	3	-1
2000 HZ					6	5	-3	1	-5	-5
3000 HZ					7	5	0	8	-3	-1
4000 HZ					12	11	0	7	0	-1
6000 HZ					16	14	1	11	10	2
HTL POST(30),RIGHT:										
500 HZ					18	19	9	16	11	8
1000 HZ					13	11	2	9	4	2
2000 HZ					7	6	-7	5	-4	-5
3000 HZ					11	3	-4	4	-4	2
4000 HZ					12	10	3	8	-2	4
6000 HZ					14	9	9	10	10	3

SUBJECT 44 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	3	-1	-1	0						
1000 HZ	-2	-1	-1	-3						
2000 HZ	-4	-6	-6	-6						
3000 HZ	-4	-3	-5	-4						
4000 HZ	-3	-2	-4	-4						
6000 HZ	5	8	9	6						
HTL PRE-TEST,LEFT:										
500 HZ	1	-1	0	2						
1000 HZ	-5	-4	-1	-2						
2000 HZ	-6	-6	-6	-6						
3000 HZ	-5	-4	-6	-3						
4000 HZ	9	5	7	11						
6000 HZ	9	4	8	3						
HTL PRE-TEST,RIGHT:										
500 HZ	-1	-1	-1	-2						
1000 HZ	-2	-3	1	-1						
2000 HZ	-4	-6	-2	-6						
3000 HZ	-4	-4	-5	-4						
4000 HZ	-3	-3	-4	-4						
6000 HZ	4	6	8	8						
HTL POST(2),LEFT:										
3000 HZ	0	-4	-2	1						
4000 HZ	11	9	15	18						
HTL POST(2),RIGHT:										
3000 HZ	-4	-3	-4	1						
4000 HZ	0	-3	-2	1						
HTL POST(30),LEFT:										
500 HZ	3	1	8	1						
1000 HZ	-4	-3	-1	-4						
2000 HZ	-6	-7	-4	-5						
3000 HZ	-5	-4	-4	-5						
4000 HZ	13	7	9	13						
6000 HZ	9	1	7	9						
HTL POST(30),RIGHT:										
500 HZ	-1	-1	-1	-1						
1000 HZ	-1	-3	-2	-2						
2000 HZ	-5	-5	-5	-7						
3000 HZ	-4	-3	-4	-2						
4000 HZ	-4	-3	-4	-4						
6000 HZ	13	4	12	14						

SUBJECT 45 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	0		-4							
1000 HZ	1		-1							
2000 HZ	12		9							
3000 HZ	6		2							
4000 HZ	4		2							
6000 HZ	3		1							
HTL PRE-TEST,LEFT:										
500 HZ	2		-1							
1000 HZ	1		-2							
2000 HZ	4		1							
3000 HZ	-1		-2							
4000 HZ	1		-4							
6000 HZ	-7		-3							
HTL PRE-TEST,RIGHT:										
500 HZ	-2		-7							
1000 HZ	-1		-2							
2000 HZ	12		8							
3000 HZ	6		-2							
4000 HZ	6		1							
6000 HZ	1		1							
HTL POST(2),LEFT:										
3000 HZ	1		-1							
4000 HZ	2		-3							
HTL POST(2),RIGHT:										
3000 HZ	10		5							
4000 HZ	11		4							
HTL POST(30),LEFT:										
500 HZ	?		-4							
1000 HZ	-1		-2							
2000 HZ	2		3							
3000 HZ	0		-1							
4000 HZ	-2		-4							
6000 HZ	-7		-1							
HTL POST(30),RIGHT:										
500 HZ	-1		-7							
1000 HZ	-1		-2							
2000 HZ	12		9							
3000 HZ	5		-1							
4000 HZ	2		1							
6000 HZ	1		8							

SUBJECT 46 MALE 22 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-2		-1						
1000 HZ		-5		-6						
2000 HZ		-5		-6						
3000 HZ		-5		-5						
4000 HZ		-5		-5						
6000 HZ		-5		-1						
HTL PRE-TEST,LEFT:										
500 HZ		3		5						
1000 HZ		1		-4						
2000 HZ		-6		-5						
3000 HZ		-2		-5						
4000 HZ		-2		-3						
6000 HZ		4		-8						
HTL PRE-TEST,RIGHT:										
500 HZ		7		-1						
1000 HZ		-4		-6						
2000 HZ		-3		-4						
3000 HZ		-5		-5						
4000 HZ		-2		-5						
6000 HZ		-7		-3						
HTL POST(2),LEFT:										
3000 HZ		5		-4						
4000 HZ		-2		5						
HTL POST(2),RIGHT:										
3000 HZ		-4		-1						
4000 HZ		-3		3						
HTL POST(30),LEFT:										
500 HZ		3		5						
1000 HZ		-3		-4						
2000 HZ		-8		-5						
3000 HZ		-5		-4						
4000 HZ		-3		3						
6000 HZ		8		-6						
HTL POST(30),RIGHT:										
500 HZ		0		-7						
1000 HZ		-5		-6						
2000 HZ		-5		-4						
3000 HZ		-4		-6						
4000 HZ		-5		-5						
6000 HZ		-6		-4						

SUBJECT 47 MALE 22 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	-5		-5							
1000 HZ	0		-4							
2000 HZ	-6		-7							
3000 HZ	1		-3							
4000 HZ	-6		-9							
6000 HZ	-4		-6							
HTL PRE-TEST,LEFT:										
500 HZ	1		-6							
1000 HZ	-1		-7							
2000 HZ	1		-2							
3000 HZ	-1		-8							
4000 HZ	-6		-9							
6000 HZ	-3		-6							
HTL PRE-TEST,RIGHT:										
500 HZ	4		-5							
1000 HZ	1		-4							
2000 HZ	-7		-7							
3000 HZ	-4		-9							
4000 HZ	-7		-10							
6000 HZ	-2		-6							
HTL POST(2),LEFT:										
3000 HZ	-5		-3							
4000 HZ	-6		-7							
HTL POST(2),RIGHT:										
3000 HZ	0		-2							
4000 HZ	-6		-7							
HTL POST(30),LEFT:										
500 HZ	1		-7							
1000 HZ	5		-8							
2000 HZ	2		-3							
3000 HZ	5		-8							
4000 HZ	-6		-9							
6000 HZ	-4		-8							
HTL POST(30),RIGHT:										
500 HZ	-2		-7							
1000 HZ	-4		-6							
2000 HZ	-3		-8							
3000 HZ	-4		-9							
4000 HZ	-7		-10							
6000 HZ	1		-6							

SUBJECT 48 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		1		4						
1000 HZ		-1		3						
2000 HZ		9		13						
3000 HZ		-6		-4						
4000 HZ		-7		-4						
6000 HZ		1		-4						
HTL PRE-TEST,LEFT:										
500 HZ		1		6						
1000 HZ		1		1						
2000 HZ		7		7						
3000 HZ		-5		-5						
4000 HZ		-6		-3						
6000 HZ		-2		5						
HTL PRE-TEST,RIGHT:										
500 HZ		-1		5						
1000 HZ		2		2						
2000 HZ		7		16						
3000 HZ		-7		-4						
4000 HZ		-7		-5						
6000 HZ		0		-1						
HTL POST(2),LEFT:										
3000 HZ		-5		8						
4000 HZ		-5		17						
HTL POST(2),RIGHT:										
3000 HZ		-6		-1						
4000 HZ		-7		8						
HTL POST(30),LEFT:										
500 HZ		4		8						
1000 HZ		0		10						
2000 HZ		5		5						
3000 HZ		-5		0						
4000 HZ		-4		5						
6000 HZ		4		8						
HTL POST(30),RIGHT:										
500 HZ		-2		5						
1000 HZ		-1		6						
2000 HZ		9		3						
3000 HZ		-6		1						
4000 HZ		-5		-2						
6000 HZ		-1		7						

SUBJECT 49 MALE 19 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					2	1	-6	-7	-3	4
1000 HZ					-8	-9	-9	-9	-7	-7
2000 HZ					-7	-8	-8	-9	-8	-8
3000 HZ					-9	-8	-9	-9	-7	-8
4000 HZ					-8	-5	-9	-10	-7	-8
6000 HZ					7	-7	-10	-8	-8	13
HTL PRE-TEST,LEFT:										
500 HZ					5	4	-5	-7	-6	7
1000 HZ					-6	-8	-9	-9	-7	-7
2000 HZ					-5	-9	-10	-8	-6	-6
3000 HZ					-5	-6	-10	-9	-6	-4
4000 HZ					-8	-8	-9	-9	-5	1
6000 HZ					17	9	1	4	2	5
HTL PRE-TEST,RIGHT:										
500 HZ					2	-2	-6	-8	-7	4
1000 HZ					-8	-8	-9	-10	-7	-8
2000 HZ					-8	-8	-8	-9	-10	-8
3000 HZ					-7	-9	-9	-9	-7	-8
4000 HZ					-8	-9	-9	-10	-6	-8
6000 HZ					12	-7	-10	-6	-4	13
HTL POST(2),LEFT:										
3000 HZ					-2	-4	-6	-8	-7	-2
4000 HZ					-8	-9	-9	-10	-7	-1
HTL POST(2),RIGHT:										
3000 HZ					-8	-8	-10	-9	-7	-6
4000 HZ					-9	-10	-9	-9	-6	-7
HTL POST(30),LEFT:										
500 HZ					3	-1	-7	-8	-7	2
1000 HZ					-8	-9	-10	-10	-10	-8
2000 HZ					-6	-9	-10	-9	-10	-8
3000 HZ					-6	-9	-8	-10	-8	-2
4000 HZ					-8	-8	-10	-10	-7	0
6000 HZ					8	9	3	3	18	10
HTL POST(30),RIGHT:										
500 HZ					-5	-8	-8	-9	-7	5
1000 HZ					-9	-9	-10	-9	-7	-8
2000 HZ					-8	-9	-10	-9	-8	-8
3000 HZ					-9	-8	-10	-9	-10	-8
4000 HZ					-9	-9	-8	-10	-10	-9
6000 HZ					11	3	-10	-1	1	14

SUBJECT 50 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					5	5	3	1	2	9
1000 HZ					0	-1	1	-2	-5	0
2000 HZ					-2	-5	-5	-6	-6	-7
3000 HZ					-2	-5	-5	-7	-6	-6
4000 HZ					-5	-7	-8	-8	-7	-8
6000 HZ					3	3	0	-2	6	9
HTL PRE-TEST,LEFT:										
500 HZ					15	4	6	0	1	10
1000 HZ					-1	-2	1	-3	-5	6
2000 HZ					-3	-4	-5	-6	-5	-2
3000 HZ					8	1	-2	-1	-2	-1
4000 HZ					1	3	-2	0	-1	-3
6000 HZ					6	10	-1	2	7	9
HTL PRE-TEST,RIGHT:										
500 HZ					4	4	1	1	0	6
1000 HZ					-1	-2	0	-1	-5	0
2000 HZ					-2	-6	-8	-6	-6	-8
3000 HZ					-2	-5	-6	-7	-6	-8
4000 HZ					-5	-7	-8	-8	-6	-7
6000 HZ					-2	2	-3	-3	2	5
HTL POST(2),LEFT:										
3000 HZ					3	2	-1	1	-3	-2
4000 HZ					6	6	4	-1	-1	1
HTL POST(2),RIGHT:										
3000 HZ					-2	-4	-5	-2	-3	-6
4000 HZ					-5	-6	-6	0	-7	-7
HTL POST(30),LEFT:										
500 HZ					4	5	2	6	4	5
1000 HZ					1	2	-3	-2	2	-3
2000 HZ					-3	-6	-5	-3	-3	-6
3000 HZ					3	1	-3	0	3	-2
4000 HZ					5	4	4	0	4	0
6000 HZ					8	18	3	1	11	8
HTL POST(30),RIGHT:										
500 HZ					6	4	2	0	3	-3
1000 HZ					1	-1	-3	-2	-1	-6
2000 HZ					-5	-7	-4	-2	-6	-6
3000 HZ					-2	-6	-3	-2	-3	-6
4000 HZ					-5	-6	-6	-2	-7	-8
6000 HZ					6	1	2	1	2	-1

SUBJECT 51 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-8	-4	6	3	11	11
1000 HZ					-4	-6	3	1	2	2
2000 HZ					-9	-8	-6	-4	-5	-5
3000 HZ					-9	-9	-5	-5	-1	-1
4000 HZ					-9	-7	1	-7	4	4
6000 HZ					-3	-1	-4	0	6	6
HTL PRE-TEST,LEFT:										
500 HZ					-6	-5	1	1	8	8
1000 HZ					-8	-6	2	1	1	1
2000 HZ					-6	-8	-4	-6	-1	-1
3000 HZ					-6	-6	-4	-5	-5	-5
4000 HZ					-7	-7	-6	-3	1	1
6000 HZ					0	8	9	4	8	8
HTL PRE-TEST,RIGHT:										
500 HZ					-6	-7	3	4	8	8
1000 HZ					-8	-7	-1	-2	0	0
2000 HZ					-10	-7	-7	-8	-5	-5
3000 HZ					-9	-7	-4	-5	-1	-1
4000 HZ					-9	-7	-1	0	4	4
6000 HZ					3	-1	-4	10	7	7
HTL POST(2),LEFT:										
3000 HZ					-5	-9	-6	-7	-2	-2
4000 HZ					-5	-9	-5	-5	5	5
HTL POST(2),RIGHT:										
3000 HZ					-6	-8	2	-4	1	1
4000 HZ					1	-2	-4	-2	8	8
HTL POST(30),LEFT:										
500 HZ					-6	-7	3	4	1	1
1000 HZ					-7	-6	3	-2	-2	-2
2000 HZ					-4	-8	-6	-4	-4	-4
3000 HZ					-8	-8	-6	-7	-5	-5
4000 HZ					-7	-9	-2	-5	0	0
6000 HZ					8	2	4	4	4	4
HTL POST(30),RIGHT:										
500 HZ					8	-7	8	3	2	2
1000 HZ					-5	-8	-3	4	-1	-1
2000 HZ					-9	-9	-7	-7	-4	-4
3000 HZ					-8	-8	-6	-8	-1	-1
4000 HZ					-7	-9	2	-4	1	1
6000 HZ					5	2	0	1	6	6

SUBJECT 52 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-1		6						
1000 HZ		0		3						
2000 HZ		-2		5						
3000 HZ		-4		-6						
4000 HZ		-5		-8						
6000 HZ		-10		4						
HTL PRE-TEST,LEFT:										
500 HZ		5		2						
1000 HZ		0		-3						
2000 HZ		7		5						
3000 HZ		2		1						
4000 HZ		-2		-4						
6000 HZ		-7		-5						
HTL PRE-TEST,RIGHT:										
500 HZ		6		3						
1000 HZ		-1		3						
2000 HZ		-2		-1						
3000 HZ		-8		-6						
4000 HZ		-6		-7						
6000 HZ		-7		2						
HTL POST(2),LEFT:										
3000 HZ		5		4						
4000 HZ		-2		-6						
HTL POST(2),RIGHT:										
3000 HZ		-3		-5						
4000 HZ		-3		-3						
HTL POST(30),LEFT:										
500 HZ		8		5						
1000 HZ		10		1						
2000 HZ		5		3						
3000 HZ		0		1						
4000 HZ		5		-6						
6000 HZ		3		-6						
HTL POST(30),RIGHT:										
500 HZ		5		1						
1000 HZ		6		2						
2000 HZ		13		0						
3000 HZ		1		-6						
4000 HZ		-2		-5						
6000 HZ		7		2						

SUBJECT 53 MALE 22 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		1		5						
1000 HZ		-1		3						
2000 HZ		-7		-4						
3000 HZ		-6		-7						
4000 HZ		-7		-6						
6000 HZ		7		4						
HTL PRE-TEST,LEFT:										
500 HZ		2		3						
1000 HZ		-3		-3						
2000 HZ		-7		-3						
3000 HZ		-4		-2						
4000 HZ		-2		1						
6000 HZ		3		10						
HTL PRE-TEST,RIGHT:										
500 HZ		0		4						
1000 HZ		4		3						
2000 HZ		-6		-5						
3000 HZ		-5		-5						
4000 HZ		-10		-5						
6000 HZ		6		3						
HTL POST(2),LEFT:										
3000 HZ		0		3						
4000 HZ		3		8						
HTL POST(2),RIGHT:										
3000 HZ		-2		1						
4000 HZ		-6		7						
HTL POST(30),LEFT:										
500 HZ		2		4						
1000 HZ		-4		-1						
2000 HZ		-5		-5						
3000 HZ		0		1						
4000 HZ		2		1						
6000 HZ		10		19						
HTL POST(30),RIGHT:										
500 HZ		1		1						
1000 HZ		4		3						
2000 HZ		-4		-2						
3000 HZ		-4		-1						
4000 HZ		-5		0						
6000 HZ		-7		4						

SUBJECT 54 MALE 23 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	8	3	-1	0						
1000 HZ	-5	-6	-6	-6						
2000 HZ	-6	-7	-6	-5						
3000 HZ	-7	-6	-6	-6						
4000 HZ	0	-5	-5	-5						
6000 HZ	-6	-4	-7	-8						
HTL PRE-TEST,LEFT:										
500 HZ	4	3	1	1						
1000 HZ	-2	-6	-7	-5						
2000 HZ	-1	-2	-4	-3						
3000 HZ	1	0	-4	-2						
4000 HZ	-4	-8	-6	-8						
6000 HZ	8	2	6	-2						
HTL PRE-TEST,RIGHT:										
500 HZ	8	3	4	-1						
1000 HZ	-4	-6	-6	-6						
2000 HZ	-6	-7	-6	-6						
3000 HZ	-7	-6	-6	-6						
4000 HZ	4	-5	-5	-4						
6000 HZ	-6	-4	-6	-7						
HTL POST(2),LEFT:										
3000 HZ	3	4	-2	11						
4000 HZ	-5	-5	2	8						
HTL POST(2),RIGHT:										
3000 HZ	-4	-7	-7	6						
4000 HZ	0	-4	2	2						
HTL POST(30),LEFT:										
500 HZ	1	3	-5	0						
1000 HZ	-3	-5	-7	-3						
2000 HZ	-3	-2	-4	-4						
3000 HZ	0	-5	-5	-4						
4000 HZ	-6	-5	-7	-3						
6000 HZ	4	-1	8	1						
HTL POST(30),RIGHT:										
500 HZ	5	-2	-2	1						
1000 HZ	-1	-6	-7	-3						
2000 HZ	-7	-8	-7	-7						
3000 HZ	-7	-7	-7	-5						
4000 HZ	1	-5	-2	-2						
6000 HZ	-4	-3	-1	-6						

SUBJECT 55 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		11		3	7	7	0	3	1	-1
1000 HZ		8		2	3	3	-1	-4	-2	-3
2000 HZ		7		1	4	3	-1	0	1	-2
3000 HZ		2		1	2	2	-2	-3	1	-2
4000 HZ		2		4	4	1	-4	-3	0	-4
6000 HZ		3		4	5	3	2	1	-3	-4
HTL PRE-TEST,LEFT:										
500 HZ		9		6	3	5	-1	1	0	4
1000 HZ		2		5	2	2	-1	0	-2	-2
2000 HZ		10		6	9	5	1	1	-1	0
3000 HZ		3		7	8	3	0	-1	-2	-2
4000 HZ		2		6	2	2	-3	-1	-3	-3
6000 HZ		4		3	6	5	-6	2	0	-1
HTL PRE-TEST,RIGHT:										
500 HZ		6		8	7	7	1	1	-1	0
1000 HZ		5		3	3	3	-1	-1	-2	-4
2000 HZ		5		5	6	4	-2	1	1	-2
3000 HZ		2		4	4	1	-2	-2	-2	-2
4000 HZ		1		8	6	1	-4	-2	2	-3
6000 HZ		8		5	5	3	6	1	-3	-1
HTL POST(2),LEFT:										
3000 HZ		2		12	4	3	-3	0	-1	-1
4000 HZ		3		16	3	5	-3	0	-1	-1
HTL POST(2),RIGHT:										
3000 HZ		6		12	4	4	-4	1	0	-3
4000 HZ		2		13	8	3	-4	0	-1	-3
HTL POST(30),LEFT:										
500 HZ		6		8	8	1	-3	-2	-2	8
1000 HZ		4		2	3	3	-4	-2	-2	-1
2000 HZ		7		8	5	9	1	-2	-1	-1
3000 HZ		0		9	8	3	-2	0	2	-2
4000 HZ		6		13	6	1	-2	4	-3	-2
6000 HZ		2		8	7	15	5	-1	-2	-2
HTL POST(30),RIGHT:										
500 HZ		8		3	6	5	-2	-1	-2	-3
1000 HZ		6		4	4	4	-3	-2	-2	-2
2000 HZ		6		7	3	4	-3	0	2	1
3000 HZ		4		6	4	5	-2	1	0	-3
4000 HZ		3		7	9	4	-3	0	-2	-3
6000 HZ		7		8	4	6	-2	0	1	-2

SUBJECT 56 FEMALE 22 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	11		15							
1000 HZ	4		6							
2000 HZ	-8		10							
3000 HZ	3		6							
4000 HZ	0		7							
6000 HZ	-4		-1							
HTL PRE-TEST,LEFT:										
500 HZ	14		11							
1000 HZ	12		3							
2000 HZ	0		-1							
3000 HZ	-1		0							
4000 HZ	-6		-3							
6000 HZ	-2		2							
HTL PRE-TEST,RIGHT:										
500 HZ	12		9							
1000 HZ	2		2							
2000 HZ	6		9							
3000 HZ	2		4							
4000 HZ	1		5							
6000 HZ	-5		3							
HTL POST(2),LEFT:										
3000 HZ	-4		9							
4000 HZ	-7		0							
HTL POST(2),RIGHT:										
3000 HZ	-5		8							
4000 HZ	-4		6							
HTL POST(30),LEFT:										
500 HZ	5		12							
1000 HZ	-4		5							
2000 HZ	-4		0							
3000 HZ	-4		6							
4000 HZ	-6		-1							
6000 HZ	-9		7							
HTL POST(30),RIGHT:										
500 HZ	1		8							
1000 HZ	-5		2							
2000 HZ	2		4							
3000 HZ	-5		4							
4000 HZ	-4		6							
6000 HZ	-5		-4							

SUBJECT 57 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					8	4	10	14	1	7
1000 HZ					5	3	-1	1	6	4
2000 HZ					0	5	1	6	2	2
3000 HZ					4	5	3	2	3	9
4000 HZ					2	2	7	-1	0	3
6000 HZ					1	3	14	6	5	12
HTL PRE-TEST,LEFT:										
500 HZ					-5	2	15	9	1	3
1000 HZ					-8	-5	5	0	-5	-3
2000 HZ					-5	-3	6	-1	-2	0
3000 HZ					2	10	12	4	1	4
4000 HZ					-4	-4	-1	-5	-2	-4
6000 HZ					-9	-4	-2	-3	1	2
HTL PRE-TEST,RIGHT:										
500 HZ					8	-1	11	-3	1	4
1000 HZ					5	-6	-1	2	5	2
2000 HZ					0	0	1	2	1	0
3000 HZ					4	5	3	1	2	6
4000 HZ					4	3	10	0	1	2
6000 HZ					3	2	6	6	8	8
HTL POST(2),LEFT:										
3000 HZ					6	6	18	8	4	5
4000 HZ					-5	-1	2	0	-1	-4
HTL POST(2),RIGHT:										
3000 HZ					2	4	9	0	9	2
4000 HZ					3	-1	10	0	2	2
HTL POST(30),LEFT:										
500 HZ					-2	2	16	9	9	1
1000 HZ					-8	-5	9	-3	-5	-4
2000 HZ					-2	5	2	0	0	-2
3000 HZ					6	8	17	3	-1	2
4000 HZ					-5	-5	8	-3	-3	-2
6000 HZ					11	0	6	-5	0	0
HTL POST(30),RIGHT:										
500 HZ					16	3	17	-2	-3	0
1000 HZ					1	-2	8	-6	-1	-1
2000 HZ					10	4	10	-4	2	-1
3000 HZ					11	5	9	-2	2	3
4000 HZ					3	0	3	-3	2	1
6000 HZ					12	6	1	2	13	10

SUBJECT 58 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	6		19							
1000 HZ	5		5							
2000 HZ	-1		1							
3000 HZ	-1		1							
4000 HZ	1		0							
6000 HZ	2		12							
HTL PRE-TEST,LEFT:										
500 HZ	12		21							
1000 HZ	5		9							
2000 HZ	5		9							
3000 HZ	3		13							
4000 HZ	0		6							
6000 HZ	5		7							
HTL PRE-TEST,RIGHT:										
500 HZ	5		12							
1000 HZ	5		6							
2000 HZ	-1		0							
3000 HZ	-1		1							
4000 HZ	-3		0							
6000 HZ	-5		5							
HTL POST(2),LEFT:										
3000 HZ	4		17							
4000 HZ	3		16							
HTL POST(2),RIGHT:										
3000 HZ	-3		7							
4000 HZ	-1		1							
HTL POST(30),LEFT:										
500 HZ	8		15							
1000 HZ	4		7							
2000 HZ	4		8							
3000 HZ	5		6							
4000 HZ	-1		6							
6000 HZ	4		9							
HTL POST(30),RIGHT:										
500 HZ	6		1							
1000 HZ	2		1							
2000 HZ	-2		0							
3000 HZ	0		0							
4000 HZ	0		0							
6000 HZ	-7		-1							

SUBJECT 59 MALE 22 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					6	0	5	3	20	9
1000 HZ					-7	-8	-4	-8	5	-4
2000 HZ					-9	-8	-3	-9	-2	-7
3000 HZ					-1	-5	-1	-3	3	0
4000 HZ					-1	-4	-5	-8	3	1
6000 HZ					-8	-5	2	-9	11	-4
HTL PRE-TEST,LEFT:										
500 HZ					4	27	1	-1	11	8
1000 HZ					-7	0	-3	-8	9	3
2000 HZ					-8	-8	-6	-9	0	-6
3000 HZ					-2	-3	1	-6	0	-1
4000 HZ					-4	-7	-7	-9	3	0
6000 HZ					7	10	5	-8	1	1
HTL PRE-TEST,RIGHT:										
500 HZ					0	-2	-2	-7	10	-2
1000 HZ					-5	-7	-4	-9	5	-4
2000 HZ					-6	-8	-4	-9	-2	-3
3000 HZ					-2	0	0	-6	3	1
4000 HZ					-2	-5	-6	-9	3	0
6000 HZ					-8	-5	4	-9	11	-6
HTL POST(2),LEFT:										
3000 HZ					2	3	3	-8	4	-4
4000 HZ					-4	-8	-7	-8	4	-1
HTL POST(2),RIGHT:										
3000 HZ					3	-1	0	-7	4	4
4000 HZ					-2	-5	-5	-8	8	-5
HTL POST(30),LEFT:										
500 HZ					1	2	2	-5	10	0
1000 HZ					-8	-6	-6	-9	9	-4
2000 HZ					-6	-8	-6	-10	2	-6
3000 HZ					-4	-5	-2	-7	4	-6
4000 HZ					-4	-8	-8	-10	10	-3
6000 HZ					4	11	2	-6	2	-5
HTL POST(30),RIGHT:										
500 HZ					4	1	1	-8	12	-4
1000 HZ					-6	0	-2	-9	1	-8
2000 HZ					-7	1	-8	-10	5	-3
3000 HZ					0	0	-1	-7	3	0
4000 HZ					-1	-6	4	-10	1	1
6000 HZ					-2	-8	2	-7	2	-5

SUBJECT 60 MALE 22 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		4		6	5	6	4	7	20	11
1000 HZ		6		11	5	2	4	3	12	6
2000 HZ		1		3	0	2	-3	1	8	2
3000 HZ		-1		1	-7	-1	-7	-6	6	0
4000 HZ		6		4	-1	5	4	6	20	10
6000 HZ		2		1	-4	1	-6	3	10	2
HTL PRE-TEST,LEFT:										
500 HZ		7		11	5	4	5	8	14	12
1000 HZ		1		3	-1	0	1	2	10	10
2000 HZ		-1		2	-2	-1	-6	2	6	2
3000 HZ		1		-3	-4	-8	-6	-3	8	6
4000 HZ		2		1	-1	-4	0	3	8	11
6000 HZ		1		11	4	0	0	4	9	9
HTL PRE-TEST,RIGHT:										
500 HZ		10		12	5	9	4	7	19	10
1000 HZ		7		15	4	3	4	3	11	10
2000 HZ		0		4	0	0	-2	1	9	2
3000 HZ		-2		1	-7	-1	-5	-1	5	0
4000 HZ		6		9	-1	3	5	4	20	10
6000 HZ		2		5	-4	-2	0	0	10	5
HTL POST(2),LEFT:										
3000 HZ		2		8	-4	-2	-4	4	10	10
4000 HZ		6		14	1	1	4	6	10	12
HTL POST(2),RIGHT:										
3000 HZ		2		9	-7	4	-4	-3	12	6
4000 HZ		3		12	-1	5	2	-3	22	16
HTL POST(30),LEFT:										
500 HZ		6		10	10	4	5	6	13	9
1000 HZ		-1		5	0	0	-3	0	9	3
2000 HZ		-2		5	0	-4	-7	1	5	4
3000 HZ		-7		4	1	-4	-7	-3	5	8
4000 HZ		-1		3	2	2	1	-2	6	5
6000 HZ		2		9	3	6	2	6	10	12
HTL POST(30),RIGHT:										
500 HZ		3		11	4	4	5	10	12	13
1000 HZ		2		7	4	4	3	5	10	11
2000 HZ		-3		5	-3	1	0	0	8	8
3000 HZ		-2		1	-5	2	-5	-3	2	3
4000 HZ		1		6	2	6	13	6	12	11
6000 HZ		-1		6	-5	-4	4	2	8	4

SUBJECT 61 MALE 20 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	-1	-2	-1	9						
1000 HZ	0	-1	-1	10						
2000 HZ	6	-5	3	3						
3000 HZ	-2	-5	-4	-2						
4000 HZ	-3	-8	-5	-4						
6000 HZ	-5	-3	-4	-6						
HTL PRE-TEST,LEFT:										
500 HZ	1	2	-2	10						
1000 HZ	2	1	-4	5						
2000 HZ	-1	1	3	0						
3000 HZ	-2	-4	-2	1						
4000 HZ	10	7	8	4						
6000 HZ	6	1	3	0						
HTL PRE-TEST,RIGHT:										
500 HZ	3	-1	-4	2						
1000 HZ	7	0	-2	6						
2000 HZ	3	-4	3	3						
3000 HZ	-1	-5	-4	-4						
4000 HZ	-2	-6	-6	-4						
6000 HZ	-1	-1	-7	-6						
HTL POST(2),LEFT:										
3000 HZ	-3	-2	-5	35						
4000 HZ	10	8	5	29						
HTL POST(2),RIGHT:										
3000 HZ	-4	-4	0	33						
4000 HZ	1	0	-4	43						
HTL POST(30),LEFT:										
500 HZ	3	3	-1	9						
1000 HZ	1	3	-1	11						
2000 HZ	-1	2	1	4						
3000 HZ	-3	1	7	9						
4000 HZ	3	5	12	20						
6000 HZ	1	1	4	12						
HTL POST(30),RIGHT:										
500 HZ	-2	-3	0	11						
1000 HZ	4	4	1	10						
2000 HZ	4	-1	7	14						
3000 HZ	-2	-5	0	11						
4000 HZ	1	-3	-4	10						
6000 HZ	-6	-7	-8	5						

SUBJECT 62 FEMALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	0	1	-4	-4						
1000 HZ	-4	-7	-5	-8						
2000 HZ	2	-2	-2	-6						
3000 HZ	-6	-7	-4	-6						
4000 HZ	-1	-8	-3	-10						
6000 HZ	-5	-3	-5	-4						
HTL PRE-TEST,LEFT:										
500 HZ	3	2	2	0						
1000 HZ	-2	-4	-4	-5						
2000 HZ	-4	0	-4	-2						
3000 HZ	-2	-5	-4	-4						
4000 HZ	4	-1	-3	-4						
6000 HZ	-7	-5	-2	-4						
HTL PRE-TEST,RIGHT:										
500 HZ	-6	-9	-4	-4						
1000 HZ	-7	-10	-5	-6						
2000 HZ	0	-1	-2	1						
3000 HZ	-6	-10	-7	-1						
4000 HZ	-1	-10	-4	-10						
6000 HZ	-4	-4	-7	-5						
HTL POST(2),LEFT:										
3000 HZ	4	1	-4	0						
4000 HZ	11	-1	4	-5						
HTL POST(2),RIGHT:										
3000 HZ	1	-8	-4	-3						
4000 HZ	-5	-7	-6	-7						
HTL POST(30),LEFT:										
500 HZ	-3	7	-4	-5						
1000 HZ	-3	-1	-5	-3						
2000 HZ	0	4	0	-4						
3000 HZ	2	-1	0	-7						
4000 HZ	5	1	-1	-5						
6000 HZ	-5	-4	-1	-1						
HTL POST(30),RIGHT:										
500 HZ	-1	-4	-4	-4						
1000 HZ	-7	-5	-7	-7						
2000 HZ	-1	-4	-3	-2						
3000 HZ	-6	-5	-6	-6						
4000 HZ	-3	-6	-5	-6						
6000 HZ	2	-4	-1	-3						

SUBJECT 63 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	-6	7	-5	-1	10	4	-1	-6	0	0
1000 HZ	-8	-8	-9	-7	0	-8	-8	-7	-8	-7
2000 HZ	-8	-7	-9	-5	0	-7	-8	-7	-6	-6
3000 HZ	-9	-6	-9	-5	0	-6	-9	-5	-7	-7
4000 HZ	-10	-6	-10	-6	-5	-6	-9	-6	-8	-7
6000 HZ	-4	-4	-9	4	12	4	10	-4	0	9
HTL PRE-TEST,LEFT:										
500 HZ	-5	0	-8	-1	11	1	-4	-3	0	-7
1000 HZ	-9	-9	-10	-8	2	-7	-8	-8	-8	-8
2000 HZ	-9	-9	-10	-5	-4	-8	-7	-8	-6	-7
3000 HZ	-6	-7	-10	-5	-4	-6	-7	1	-4	-8
4000 HZ	-8	-9	-10	-7	-1	-8	-6	-5	-7	-8
6000 HZ	-7	-1	-6	-1	9	2	-6	2	2	10
HTL PRE-TEST,RIGHT:										
500 HZ	-4	-3	-7	-3	10	-2	-6	-7	-7	-2
1000 HZ	-9	-8	-10	-7	0	-8	-8	-7	-8	-6
2000 HZ	-9	-6	-10	-4	0	-6	-8	-7	-4	-4
3000 HZ	-9	-6	-9	-4	0	-5	-8	-5	-6	-2
4000 HZ	-10	-5	-10	-10	2	-6	-8	-6	-4	-8
6000 HZ	-4	-4	-8	3	8	4	-7	-3	12	4
HTL POST(2),LEFT:										
3000 HZ	-8	-5	-7	1	2	-1	-5	-5	-6	-3
4000 HZ	-10	-10	-8	3	3	0	-2	-5	-5	-1
HTL POST(2),RIGHT:										
3000 HZ	-7	-4	-9	3	4	0	-4	-4	-2	-1
4000 HZ	-8	-10	-10	-4	4	0	-8	-5	3	-2
HTL POST(30),LEFT:										
500 HZ	-7	6	-5	-4	12	-6	-2	-3	-4	-3
1000 HZ	-10	-8	-10	-9	1	-5	-8	-8	-8	-3
2000 HZ	-10	-7	-10	-8	1	-6	-8	-8	-7	-4
3000 HZ	-9	-10	-10	-5	0	-2	-8	0	0	-1
4000 HZ	-10	-9	-10	-6	4	-6	-8	-8	-7	1
6000 HZ	-4	2	-1	8	12	-10	23	6	6	6
HTL POST(30),RIGHT:										
500 HZ	-9	-2	-8	-6	8	4	-1	-7	2	-1
1000 HZ	-10	-9	-9	-7	-1	-7	-8	-7	-9	-8
2000 HZ	-9	-7	-10	-8	0	-6	-7	-7	-8	-8
3000 HZ	-10	-5	-10	-10	2	-7	-8	-5	-4	-7
4000 HZ	-10	-6	-10	-7	0	-2	-8	-6	-4	-9
6000 HZ	-6	-4	-0	6	10	1	7	-3	1	9

SUBJECT 64 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	4	2	4	-2						
1000 HZ	1	2	1	-2						
2000 HZ	-1	-2	-3	-2						
3000 HZ	-4	-4	-4	-5						
4000 HZ	-7	-8	-8	-5						
6000 HZ	-2	7	0	-4						
HTL PRE-TEST,LEFT.										
500 HZ	4	2	2	-1						
1000 HZ	2	2	3	0						
2000 HZ	-4	-6	-5	-6						
3000 HZ	0	-3	-2	-5						
4000 HZ	-1	-7	-6	-4						
6000 HZ	2	1	-2	-3						
HTL PRE-TEST,RIGHT:										
500 HZ	5	-4	-1	4						
1000 HZ	1	-2	0	-3						
2000 HZ	3	-3	-3	-1						
3000 HZ	-4	-4	-4	-5						
4000 HZ	-9	-8	-8	-5						
6000 HZ	3	4	1	0						
HTL POST(2),LEFT:										
3000 HZ	0	4	0	13						
4000 HZ	-5	-1	1	19						
HTL POST(2),RIGHT:										
3000 HZ	-5	1	1	3						
4000 HZ	-7	-7	-4	3						
HTL POST(30),LEFT:										
500 HZ	0	5	3	1						
1000 HZ	1	1	2	0						
2000 HZ	-4	-3	1	-3						
3000 HZ	-3	-7	-1	0						
4000 HZ	-4	-6	-5	6						
6000 HZ	3	4	0	2						
HTL POST(30),RIGHT:										
500 HZ	2	2	0	0						
1000 HZ	-2	1	-5	-3						
2000 HZ	-2	-3	-4	-3						
3000 HZ	-5	-3	-3	-3						
4000 HZ	-9	-7	-6	1						
6000 HZ	4	6	5	-2						

SUBJECT 65 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-3	3	1	-6	1	-5
1000 HZ					0	-1	2	-6	5	-5
2000 HZ					-3	2	-4	-7	3	-3
3000 HZ					-1	-4	0	-7	-5	-6
4000 HZ					-2	-3	-4	-9	-3	-6
6000 HZ					-10	4	22	5	-2	0
HTL PRE-TEST,LEFT:										
500 HZ					1	-2	-3	-8	0	-1
1000 HZ					0	0	-2	-9	-5	-3
2000 HZ					-8	-7	-8	-9	-6	-8
3000 HZ					-5	-4	-4	-9	-3	-3
4000 HZ					-7	-6	-7	-9	-4	-4
6000 HZ					10	9	6	5	-1	8
HTL PRE-TEST,RIGHT:										
500 HZ					-3	-2	2	4	-3	3
1000 HZ					-2	-3	1	-1	-1	-5
2000 HZ					0	-2	-4	3	-1	-2
3000 HZ					-3	-4	-4	-1	-2	-6
4000 HZ					-3	-5	-5	-8	-2	-6
6000 HZ					20	4	9	18	10	0
HTL POST(2),LEFT:										
3000 HZ					1	4	1	1	4	7
4000 HZ					-7	-4	-8	0	-2	2
HTL POST(2),RIGHT:										
3000 HZ					2	-2	-4	-4	-2	-1
4000 HZ					-6	-2	-5	-5	2	-5
HTL POST(30),LEFT:										
500 HZ					0	0	4	-3	2	-2
1000 HZ					1	-2	-2	-7	-4	2
2000 HZ					-5	-6	-8	-8	-8	-7
3000 HZ					0	-2	0	-4	4	-6
4000 HZ					-6	-5	-8	-4	-1	-6
6000 HZ					14	14	9	11	9	0
HTL POST(30),RIGHT:										
500 HZ					1	2	-7	14	1	-2
1000 HZ					-1	-4	-6	-1	1	-5
2000 HZ					5	2	-5	0	[illegible]	-4
3000 HZ					4	-3	-3	-4	[illegible]	-4
4000 HZ					-4	-8	-5	-5	[illegible]	-7
6000 HZ					18	4	12	-2	[illegible]	13

SUBJECT 66 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1600	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-4	-6	6	2	6	6
1000 HZ					-6	-10	-7	-5	-7	-7
2000 HZ					-4	-8	0	2	-7	-7
3000 HZ					-6	-10	-8	-7	-8	-8
4000 HZ					-6	-10	-7	-7	-8	-8
6000 HZ					-9	-9	3	-6	-7	-7
HTL PRE-TEST,LEFT:										
500 HZ					0	-7	2	-2	1	1
1000 HZ					-5	-8	-5	-4	-6	-6
2000 HZ					-6	-8	-8	-3	-8	-8
3000 HZ					-1	-8	-3	4	-2	-2
4000 HZ					-5	-8	1	5	-3	-3
6000 HZ					-8	-8	[illegible]	-3	-6	-6
HTL PRE-TEST,RIGHT:										
500 HZ					-4	-8	6	4	1	1
1000 HZ					-6	-9	-2	-3	-7	-7
2000 HZ					-4	-8	3	2	-2	-2
3000 HZ					-6	-9	-6	-5	-2	-2
4000 HZ					-6	-8	-6	-4	-8	-8
6000 HZ					-9	-10	3	-6	-6	-6
HTL POST(2),LEFT:										
3000 HZ					-4	-7	3	4	3	3
4000 HZ					-4	-9	2	0	-2	-2
HTL POST(2),RIGHT:										
3000 HZ					-3	-8	-3	-2	-3	-3
4000 HZ					-4	-9	-3	-6	-7	-7
HTL POST(30),LEFT:										
500 HZ					-6	-6	-1	8	-6	-6
1000 HZ					-7	-7	-7	-3	-7	-7
2000 HZ					-6	-7	-7	-7	-8	-8
3000 HZ					0	-6	3	3	3	3
4000 HZ					-3	-5	2	3	-1	-1
6000 HZ					-6	-3	0	-3	-5	-5
HTL POST(30),RIGHT:										
500 HZ					-6	-5	0	6	-5	-5
1000 HZ					-4	-6	-6	-1	-7	-7
2000 HZ					-7	-9	-2	-1	-5	-5
3000 HZ					-7	-8	-8	-2	-8	-8
4000 HZ					-6	-7	-7	-7	-8	-8
6000 HZ					-8	-8	-7	-5	-8	-8

SUBJECT 67 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-5	-5	-5	-4						
1000 HZ	-3	-3	-3	-4						
2000 HZ	1	0	-2	-4						
3000 HZ	3	-1	3	-4						
4000 HZ	0	-3	2	-5						
6000 HZ	3	-2	0	-5						
HTL PRE-TEST,LEFT:										
500 HZ	2	-3	1	-2						
1000 HZ	-3	-4	-2	-4						
2000 HZ	-4	-4	-3	-4						
3000 HZ	2	-3	1	-4						
4000 HZ	-4	-5	2	-3						
6000 HZ	19	10	9	13						
HTL PRE-TEST,RIGHT:										
500 HZ	-4	-5	5	-4						
1000 HZ	-3	-3	2	-2						
2000 HZ	6	0	8	3						
3000 HZ	4	-3	4	-3						
4000 HZ	5	-3	3	-1						
6000 HZ	5	-2	2	-2						
HTL POST(2),LEFT:										
3000 HZ	8	10	11	-1						
4000 HZ	-2	1	5	4						
HTL POST(2),RIGHT:										
3000 HZ	11	6	7	7						
4000 HZ	6	3	4	-3						
HTL POST(30),LEFT:										
500 HZ	1	-3	0	-5						
1000 HZ	-4	-5	-3	-5						
2000 HZ	-2	-4	-3	-6						
3000 HZ	0	-6	2	-1						
4000 HZ	-3	-6	-2	-1						
6000 HZ	9	1	15	1						
HTL POST(30),RIGHT:										
500 HZ	-3	-3	-1	-5						
1000 HZ	-1	-3	-1	-5						
2000 HZ	5	-4	2	0						
3000 HZ	3	[illegible]	4	3						
4000 HZ	2	-1	4	-3						
6000 HZ	-3	2	5	-1						

SUBJECT 68 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		13		14						
1000 HZ		9		6						
2000 HZ		-5		0						
3000 HZ		-6		-6						
4000 HZ		-5		-3						
6000 HZ		2		4						
HTL PRE-TEST,LEFT:										
500 HZ		12		11						
1000 HZ		6		3						
2000 HZ		3		2						
3000 HZ		1		2						
4000 HZ		3		1						
6000 HZ		7		8						
HTL PRE-TEST,RIGHT:										
500 HZ		18		16						
1000 HZ		12		8						
2000 HZ		-3		2						
3000 HZ		-3		-4						
4000 HZ		-3		-3						
6000 HZ		3		0						
HTL POST(2),LEFT:										
3000 HZ		5		10						
4000 HZ		1		4						
HTL POST(2),RIGHT:										
3000 HZ		1		9						
4000 HZ		-5		1						
HTL POST(30),LEFT:										
500 HZ		10		12						
1000 HZ		5		9						
2000 HZ		1		3						
3000 HZ		2		7						
4000 HZ		0		4						
6000 HZ		5		11						
HTL POST(30),RIGHT:										
500 HZ		18		13						
1000 HZ		5		15						
2000 HZ		-1		2						
3000 HZ		-6		-2						
4000 HZ		-3		1						
6000 HZ		4		3						

SUBJECT 69 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-4		-1							
1000 HZ	-4		-2							
2000 HZ	0		-2							
3000 HZ	-1		0							
4000 HZ	-4		-4							
6000 HZ	8		1							
HTL PRE-TEST,LEFT:										
500 HZ	-5		-1							
1000 HZ	-4		-5							
2000 HZ	-3		-2							
3000 HZ	-2		-3							
4000 HZ	0		-4							
6000 HZ	4		-2							
HTL PRE-TEST,RIGHT:										
500 HZ	-5		-3							
1000 HZ	-3		-6							
2000 HZ	1		-3							
3000 HZ	-2		-4							
4000 HZ	-3		-2							
6000 HZ	8		0							
HTL POST(2),LEFT:										
3000 HZ	2		1							
4000 HZ	-1		-2							
HTL POST(2),RIGHT:										
3000 HZ	-5		-3							
4000 HZ	-6		-3							
HTL POST(30),LEFT:										
500 HZ	-1		-5							
1000 HZ	-3		-5							
2000 HZ	-3		-8							
3000 HZ	-4		-4							
4000 HZ	-4		-1							
6000 HZ	7		3							
HTL POST(30),RIGHT:										
500 HZ	-3		-1							
1000 HZ	-4		-2							
2000 HZ	0		-6							
3000 HZ	-4		-3							
4000 HZ	-5		-4							
6000 HZ	8		-1							

SUBJECT 70 FEMALE 22 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					21	15	23	7	10	11
1000 HZ					8	5	5	-3	0	-1
2000 HZ					0	-4	-3	-4	-3	-6
3000 HZ					0	-3	-2	-5	-3	-5
4000 HZ					-2	-4	-5	-6	-4	-5
6000 HZ					6	6	7	-4	-3	-6
HTL PRE-TEST,LEFT:										
500 HZ					22	14	15	6	15	6
1000 HZ					6	1	2	-1	-1	-2
2000 HZ					-4	-6	-5	-5	-5	-6
3000 HZ					1	0	-4	-5	-1	-6
4000 HZ					-2	-1	-4	-4	0	-4
6000 HZ					16	15	14	2	10	-2
HTL PRE-TEST,RIGHT:										
500 HZ					21	13	15	7	10	4
1000 HZ					5	-1	4	-4	0	-5
2000 HZ					2	-4	-6	-4	-2	-5
3000 HZ					2	-2	-2	-5	-4	-5
4000 HZ					-2	-4	-5	-6	-4	-5
6000 HZ					4	7	3	-4	-3	-7
HTL POST(2),LEFT:										
3000 HZ					8	4	4	1	1	-3
4000 HZ					2	3	0	-1	-1	-3
HTL POST(2),RIGHT:										
3000 HZ					2	2	-1	-5	0	-4
4000 HZ					2	1	-2	-5	-3	-4
HTL POST(30),LEFT:										
500 HZ					20	20	15	11	11	7
1000 HZ					5	4	9	-2	4	-4
2000 HZ					1	-6	-2	-3	-5	-5
3000 HZ					2	2	3	-3	-3	-3
4000 HZ					-2	4	-2	-2	-2	-3
6000 HZ					11	26	15	8	12	2
HTL POST(30),RIGHT:										
500 HZ					21	17	16	8	12	-2
1000 HZ					8	6	4	-7	1	4
2000 HZ					2	-5	-4	-7	-4	-5
3000 HZ					-4	-3	-4	-6	-6	-4
4000 HZ					1	-4	-6	-5	-5	-4
6000 HZ					6	4	3	-4	0	-4

SUBJECT 71 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-5	-5	-2	-6	-4	2
1000 HZ					-6	-6	-7	-8	-8	-6
2000 HZ					5	-2	-4	-8	-7	-3
3000 HZ					6	-1	1	-4	-3	-3
4000 HZ					9	-1	-1	-7	-2	1
6000 HZ					11	-1	-3	-1	1	4
HTL PRE-TEST,LEFT:										
500 HZ					5	0	-2	-3	1	-4
1000 HZ					-3	-6	-4	-7	-7	-7
2000 HZ					-3	-8	-6	-8	-8	-9
3000 HZ					-5	-6	-6	-7	-6	-7
4000 HZ					-6	-8	-6	-9	-8	-8
6000 HZ					-3	-10	-5	-6	-8	-7
HTL PRE-TEST,RIGHT:										
500 HZ					4	-3	-2	-4	-3	-2
1000 HZ					-6	-6	-7	-8	-8	-8
2000 HZ					-4	-5	-6	-7	-7	-8
3000 HZ					0	-1	1	-4	-1	-7
4000 HZ					-1	-1	3	-6	-2	-7
6000 HZ					-8	-1	1	-5	1	-6
HTL POST(2),LEFT:										
3000 HZ					-2	-3	-3	-4	-5	-7
4000 HZ					-6	-7	-6	-8	-8	-8
HTL POST(2),RIGHT:										
3000 HZ					2	-3	1	-5	-1	-7
4000 HZ					-10	-3	1	-5	1	-6
HTL POST(30),LEFT:										
500 HZ					0	-2	-1	-6	0	-5
1000 HZ					-4	-7	-5	-8	-6	-7
2000 HZ					-7	-8	-7	-9	-8	-8
3000 HZ					-3	-6	-8	-4	-5	-6
4000 HZ					-4	-7	-6	-8	-8	-6
6000 HZ					-7	-6	-4	-9	-8	-7
HTL POST(30),RIGHT:										
500 HZ					-4	-4	0	-1	-6	-5
1000 HZ					-6	-7	-7	-8	-9	-8
2000 HZ					2	-6	-4	-7	-6	-8
3000 HZ					1	-1	0	-4	-4	-5
4000 HZ					10	-6	-2	-2	-6	-4
6000 HZ					2	-1	-1	-2	-5	-4

SUBJECT 72 MALE 23 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	7	-2	7	-1						
1000 HZ	3	-3	4	-3						
2000 HZ	-4	1	1	-5						
3000 HZ	1	-3	1	-5						
4000 HZ	-5	-4	-2	-6						
6000 HZ	14	8	8	16						
HTL PRE-TEST,LEFT:										
500 HZ	-2	-5	-2	-3						
1000 HZ	-3	-4	-2	-4						
2000 HZ	-4	-5	-4	-7						
3000 HZ	-5	-8	-4	-4						
4000 HZ	-5	-7	-4	-4						
6000 HZ	6	8	3	9						
HTL PRE-TEST,RIGHT:										
500 HZ	6	0	5	-1						
1000 HZ	2	-2	5	-1						
2000 HZ	-5	-2	0	-5						
3000 HZ	1	-3	-1	-4						
4000 HZ	-5	-4	-2	-5						
6000 HZ	12	-8	6	15						
HTL POST(2),LEFT:										
3000 HZ	-4	-4	-3	0						
4000 HZ	-5	-4	-1	2						
HTL POST(2),RIGHT:										
3000 HZ	-1	-3	-4	0						
4000 HZ	-4	-5	0	-3						
HTL POST(30),LEFT:										
500 HZ	-3	-5	-2	-5						
1000 HZ	0	-1	-2	-4						
2000 HZ	0	-5	-4	-3						
3000 HZ	-6	-5	-7	-1						
4000 HZ	-5	-4	-4	0						
6000 HZ	5	3	1	9						
HTL POST(30),RIGHT:										
500 HZ	6	-5	-2	-1						
1000 HZ	3	-2	-1	-1						
2000 HZ	-1	-3	-1	-1						
3000 HZ	-1	-3	-6	-2						
4000 HZ	-4	-4	0	-1						
6000 HZ	5	6	7	14						

SUBJECT 73 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					7	5	5	7	8	5
1000 HZ					0	5	2	7	10	6
2000 HZ					19	9	13	14	22	20
3000 HZ					-4	-6	-4	-3	-1	1
4000 HZ					-1	-5	-4	-4	-1	4
6000 HZ					-5	0	-1	1	0	0
HTL PRE-TEST,LEFT:										
500 HZ					-2	1	0	5	3	8
1000 HZ					0	4	2	13	10	10
2000 HZ					12	10	15	23	24	21
3000 HZ					1	0	1	9	4	9
4000 HZ					-1	-2	8	5	2	8
6000 HZ					0	7	11	10	11	12
HTL PRE-TEST,RIGHT:										
500 HZ					0	4	4	6	7	3
1000 HZ					-2	5	3	14	6	2
2000 HZ					19	11	13	20	21	18
3000 HZ					-4	-6	-4	-2	0	-1
4000 HZ					-6	-5	-3	-2	0	-2
6000 HZ					3	5	1	1	2	0
HTL POST(2),LEFT:										
3000 HZ					0	7	3	10	9	11
4000 HZ					-1	11	8	10	6	3
HTL POST(2),RIGHT:										
3000 HZ					-4	0	-3	0	0	2
4000 HZ					-4	1	-5	1	0	-3
HTL POST(30),LEFT:										
500 HZ					2	4	3	3	5	4
1000 HZ					4	7	5	17	12	7
2000 HZ					10	16	11	25	22	18
3000 HZ					-2	1	0	1	9	2
4000 HZ					-3	8	-1	10	9	3
6000 HZ					9	12	20	18	11	8
HTL POST(30),RIGHT:										
500 HZ					-3	5	3	5	11	2
1000 HZ					2	9	3	12	14	7
2000 HZ					10	17	17	22	22	17
3000 HZ					-6	-2	-3	0	2	2
4000 HZ					-5	-2	-5	6	-4	-3
6000 HZ					0	6	2	-2	4	0

SUBJECT 74 FEMALE 20 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ	0	1	8	1						
1000 HZ	5	5	3	5						
2000 HZ	3	5	10	5						
3000 HZ	-4	-1	1	-1						
4000 HZ	-5	-5	-1	-5						
6000 HZ	6	11	5	11						
HTL PRE-TEST,LEFT:										
500 HZ	4	7	0	7						
1000 HZ	7	-1	1	-1						
2000 HZ	-1	0	-2	0						
3000 HZ	-4	-2	-4	-2						
4000 HZ	-6	-8	-6	-8						
6000 HZ	3	15	-1	15						
HTL PRE-TEST,RIGHT:										
500 HZ	2	1	4	1						
1000 HZ	4	3	4	3						
2000 HZ	6	11	11	11						
3000 HZ	-4	-4	8	-4						
4000 HZ	-6	-2	6	-2						
6000 HZ	7	9	7	9						
HTL POST(2),LEFT:										
3000 HZ	-1	7	1	3						
4000 HZ	-6	-10	-3	20						
HTL POST(2),RIGHT:										
3000 HZ	-2	-4	2	0						
4000 HZ	-3	-7	-2	1						
HTL POST(30),LEFT:										
500 HZ	1	3	1	1						
1000 HZ	2	-3	2	-1						
2000 HZ	1	-5	5	-4						
3000 HZ	-2	-1	-1	-1						
4000 HZ	-7	-9	-5	-7						
6000 HZ	2	6	-10	27						
HTL POST(30),RIGHT:										
500 HZ	-2	1	-1	1						
1000 HZ	10	3	8	10						
2000 HZ	6	2	9	2						
3000 HZ	-2	5	-1	0						
4000 HZ	-5	-6	-2	-2						
6000 HZ	5	5	8	22						

SUBJECT 75 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					4	-3	-4	-4	-2	6
1000 HZ					0	-5	-6	-5	-8	6
2000 HZ					-6	-6	-8	-8	-8	-8
3000 HZ					-2	-4	-5	-7	-7	-6
4000 HZ					-4	-5	-5	-8	-8	-8
6000 HZ					12	-5	0	-4	3	-3
HTL PRE-TEST,LEFT:										
500 HZ					-1	-1	-5	-5	-6	-5
1000 HZ					1	-2	-5	-4	-4	-4
2000 HZ					-6	-6	-7	-7	-8	-8
3000 HZ					-4	-5	-7	-7	-7	-8
4000 HZ					-5	-4	-5	-6	-8	-6
6000 HZ					4	1	2	-4	-8	-1
HTL PRE-TEST,RIGHT:										
500 HZ					-1	-4	0	-4	-7	-6
1000 HZ					-5	-5	-6	-5	-5	-4
2000 HZ					-6	-6	-8	-8	-3	-8
3000 HZ					-4	-3	-6	-7	-6	-6
4000 HZ					-6	-5	-5	-8	-7	-5
6000 HZ					10	-5	-5	-4	2	-5
HTL POST(2),LEFT:										
3000 HZ					-4	-4	-6	-4	-10	-6
4000 HZ					-6	-7	-6	-5	-10	-7
HTL POST(2),RIGHT:										
3000 HZ					-3	-4	-4	-5	-8	4
4000 HZ					-6	-3	-6	-3	-8	-6
HTL POST(30),LEFT:										
500 HZ					1	-4	-5	-2	11	-6
1000 HZ					2	-6	-4	-2	-5	-4
2000 HZ					-6	-7	-7	-8	-8	-7
3000 HZ					-5	-8	-7	-8	-7	-8
4000 HZ					-2	-7	-6	-7	-8	-6
6000 HZ					4	-3	-1	2	8	-2
HTL POST(30),RIGHT:										
500 HZ					-3	-5	-6	-6	-7	-7
1000 HZ					-3	-5	-7	-6	-8	-7
2000 HZ					-5	-8	-8	-8	-2	-8
3000 HZ					-5	-7	-4	-7	-5	-8
4000 HZ					-6	-8	-6	-8	-8	-7
6000 HZ					-5	-1	-3	-2	-10	-5

SUBJECT 76 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-4	-3	-1	5	-2	-2
1000 HZ					-6	-8	-7	-8	-9	-8
2000 HZ					-8	-9	-8	-9	-9	-8
3000 HZ					-9	-9	-8	-9	-9	-9
4000 HZ					-8	-7	-8	-9	-9	-9
6000 HZ					-2	4	-1	4	3	4
HTL PRE-TEST,LEFT:										
500 HZ					6	4	12	-4	-5	-1
1000 HZ					-6	-6	4	-8	-9	-7
2000 HZ					-8	-7	-9	-9	-9	-8
3000 HZ					-8	-7	-8	-9	-9	-9
4000 HZ					-8	-6	-8	-9	-9	-9
6000 HZ					6	8	5	4	5	17
HTL PRE-TEST,RIGHT:										
500 HZ					-2	6	-4	-2	-3	-7
1000 HZ					-7	-7	-9	-8	-9	-8
2000 HZ					-8	-9	-9	-9	-9	-9
3000 HZ					-8	-7	-9	-9	-9	-8
4000 HZ					-6	-7	-9	-9	-9	-8
6000 HZ					-6	4	5	4	-1	8
HTL POST(2),LEFT:										
3000 HZ					-5	-6	0	-9	-8	-8
4000 HZ					-7	-3	-9	-9	-9	-9
HTL POST(2),RIGHT:										
3000 HZ					-10	1	-9	-9	-9	-9
4000 HZ					-10	-6	-9	-9	-9	-9
HTL POST(30),LEFT:										
500 HZ					5	-1	15	-4	9	-2
1000 HZ					-6	-7	-2	-8	-5	-7
2000 HZ					-6	-8	-7	-8	-9	-6
3000 HZ					-6	-8	-8	-9	-9	-8
4000 HZ					-5	-9	-9	-9	-9	-9
6000 HZ					15	24	17	12	-2	12
HTL POST(30),RIGHT:										
500 HZ					-3	-4	-6	-5	-6	-4
1000 HZ					-6	-7	-8	-9	-9	-8
2000 HZ					-8	-7	-9	-9	-9	-9
3000 HZ					-7	-8	-9	-9	-9	-7
4000 HZ					-7	-5	-9	-9	-9	-7
6000 HZ					2	0	10	0	12	10

SUBJECT 77 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		7		0						
1000 HZ		1		-3						
2000 HZ		0		-3						
3000 HZ		-7		-3						
4000 HZ		3		-1						
6000 HZ		8		6						
HTL PRE-TEST,LEFT:										
500 HZ		-2		8						
1000 HZ		0		1						
2000 HZ		3		5						
3000 HZ		3		12						
4000 HZ		7		10						
6000 HZ		11		9						
HTL PRE-TEST,RIGHT:										
500 HZ		3		1						
1000 HZ		-3		-1						
2000 HZ		0		-1						
3000 HZ		0		-3						
4000 HZ		5		-1						
6000 HZ		8		5						
HTL POST(2),LEFT:										
3000 HZ		13		25						
4000 HZ		9		16						
HTL POST(2),RIGHT:										
3000 HZ		-2		5						
4000 HZ		7		5						
HTL POST(30),LEFT:										
500 HZ		9		2						
1000 HZ		-2		0						
2000 HZ		5		6						
3000 HZ		12		19						
4000 HZ		9		7						
6000 HZ		14		8						
HTL POST(30),RIGHT:										
500 HZ		-1		3						
1000 HZ		4		-3						
2000 HZ		-5		-3						
3000 HZ		-3		1						
4000 HZ		0		1						
6000 HZ		6		7						

SUBJECT 78 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	60	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-2		-4						
1000 HZ		1		-4						
2000 HZ		0		-6						
3000 HZ		-6		-8						
4000 HZ		-2		-6						
6000 HZ		-5		-6						
HTL PRE-TEST,LEFT:										
500 HZ		-5		-6						
1000 HZ		-5		-6						
2000 HZ		-5		-6						
3000 HZ		-7		-8						
4000 HZ		-4		-6						
6000 HZ		-5		-5						
HTL PRE-TEST,RIGHT:										
500 HZ		-4		-6						
1000 HZ		-3		-4						
2000 HZ		-5		-7						
3000 HZ		-7		-10						
4000 HZ		-6		-8						
6000 HZ		-6		-6						
HTL POST(2),LEFT:										
3000 HZ		2		-4						
4000 HZ		-1		-1						
HTL POST(2),RIGHT:										
3000 HZ		-2		-7						
4000 HZ		-6		3						
HTL POST(30),LEFT:										
500 HZ		1		-6						
1000 HZ		-1		-6						
2000 HZ		-3		-6						
3000 HZ		-6		-7						
4000 HZ		-7		-5						
6000 HZ		-4		-6						
HTL POST(30),RIGHT:										
500 HZ		-3		-5						
1000 HZ		-2		-6						
2000 HZ		-6		-6						
3000 HZ		-8		-10						
4000 HZ		-8		-7						
6000 HZ		1		-3						

SUBJECT 79 MALE 20 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					1	-3	-8	6	7	16
1000 HZ					-7	-8	-9	-2	-4	5
2000 HZ					-6	-9	-9	0	-4	5
3000 HZ					-5	-8	-8	1	0	5
4000 HZ					-7	-6	-8	3	0	7
6000 HZ					10	-4	-2	2	7	3
HTL PRE-TEST,LEFT:										
500 HZ					11	-1	-1	12	11	16
1000 HZ					-3	-6	-9	2	2	9
2000 HZ					-5	-7	-9	-1	-3	9
3000 HZ					-5	-8	-8	-1	-2	4
4000 HZ					-5	-8	-9	-1	1	5
6000 HZ					-6	-8	-4	2	-3	5
HTL PRE-TEST,RIGHT:										
500 HZ					-3	-6	-9	6	2	9
1000 HZ					-6	-9	-9	-1	-6	-2
2000 HZ					-5	-9	-9	1	-4	1
3000 HZ					-5	-8	-10	1	0	1
4000 HZ					-5	-6	-4	3	1	6
6000 HZ					13	-5	-3	2	10	3
HTL POST(2),LEFT:										
3000 HZ					-1	-8	-8	3	19	1
4000 HZ					1	-6	-9	1	3	0
HTL POST(2),RIGHT:										
3000 HZ					-1	-8	-8	4	3	2
4000 HZ					-4	-3	-5	9	3	6
HTL POST(30),LEFT:										
500 HZ					2	-3	1	7	12	12
1000 HZ					-4	-9	-9	0	2	2
2000 HZ					-5	-8	-9	-2	0	-1
3000 HZ					-5	-5	-9	2	-1	0
4000 HZ					-5	-6	-9	1	1	-2
6000 HZ					-5	-6	-2	-1	-3	5
HTL POST(30),RIGHT:										
500 HZ					2	-3	-9	3	4	2
1000 HZ					-6	-8	-9	-3	-5	-5
2000 HZ					-6	-8	-9	2	0	0
3000 HZ					-6	-6	-9	1	3	1
4000 HZ					-5	-4	-9	9	10	6
6000 HZ					10	-1	4	7	3	4

SUBJECT 80 MALE 25 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	12		14							
1000 HZ	4		4							
2000 HZ	-2		8							
3000 HZ	-3		-1							
4000 HZ	5		1							
6000 HZ	13		8							
HTL PRE-TEST,LEFT:										
500 HZ	11		9							
1000 HZ	1		0							
2000 HZ	0		11							
3000 HZ	3		5							
4000 HZ	12		-6							
6000 HZ	21		17							
HTL PRE-TEST,RIGHT:										
500 HZ	16		11							
1000 HZ	18		2							
2000 HZ	1		12							
3000 HZ	-3		6							
4000 HZ	12		2							
6000 HZ	24		16							
HTL POST(2),LEFT:										
3000 HZ	9		23							
4000 HZ	-3		1							
HTL POST(2),RIGHT:										
3000 HZ	2		-1							
4000 HZ	6		3							
HTL POST(30),LEFT:										
500 HZ	13		6							
1000 HZ	7		1							
2000 HZ	8		-4							
3000 HZ	9		2							
4000 HZ	-1		-7							
6000 HZ	23		13							
HTL POST(30),RIGHT:										
500 HZ	13		2							
1000 HZ	11		-1							
2000 HZ	7		-3							
3000 HZ	1		-2							
4000 HZ	10		1							
6000 HZ	18		7							

SUBJECT 81 FEMALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-3	-2	-2	-5	1	-4
1000 HZ					-4	-6	-3	-5	-3	-3
2000 HZ					-7	-8	-7	-7	-8	-8
3000 HZ					8	7	13	8	6	2
4000 HZ					0	2	3	4	-3	0
6000 HZ					4	2	2	9	3	4
HTL PRE-TEST,LEFT:										
500 HZ					6	-1	-3	-3	-2	-5
1000 HZ					-3	-5	-3	-5	-6	-8
2000 HZ					-4	-6	-4	-5	-5	-8
3000 HZ					0	-3	-4	-3	-5	-6
4000 HZ					-3	2	2	0	2	-4
6000 HZ					7	7	13	10	5	2
HTL PRE-TEST,RIGHT:										
500 HZ					-2	3	3	-3	1	-2
1000 HZ					-4	0	-3	-5	-1	-4
2000 HZ					-7	-8	-7	-7	-8	-8
3000 HZ					6	5	10	5	4	4
4000 HZ					-2	-10	2	2	-3	0
6000 HZ					4	6	7	8	3	3
HTL POST(2),LEFT:										
3000 HZ					1	0	1	-2	-2	-4
4000 HZ					1	2	0	1	0	-6
HTL POST(2),RIGHT:										
3000 HZ					11	10	8	6	10	9
4000 HZ					2	2	4	3	-2	-2
HTL POST(30),LEFT:										
500 HZ					2	-1	-4	-5	-4	3
1000 HZ					-5	-2	-5	-5	-5	-6
2000 HZ					-4	-5	-6	-7	-6	-4
3000 HZ					-2	0	-6	-3	-7	-4
4000 HZ					3	4	1	-1	0	2
6000 HZ					6	4	2	5	4	16
HTL POST(30),RIGHT:										
500 HZ					0	1	-4	-3	0	14
1000 HZ					1	-2	-4	-6	-5	-1
2000 HZ					-7	-7	-6	-7	-8	-8
3000 HZ					4	5	8	3	6	4
4000 HZ					-1	3	2	1	-2	-1
6000 HZ					5	9	2	5	5	2

SUBJECT 82 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		4		9						
1000 HZ		-3		1						
2000 HZ		-6		-7						
3000 HZ		-4		-5						
4000 HZ		-3		0						
6000 HZ		1		4						
HTL PRE-TEST,LEFT:										
500 HZ		5		11						
1000 HZ		-5		-5						
2000 HZ		-7		-6						
3000 HZ		-7		-2						
4000 HZ		1		-2						
6000 HZ		2		19						
HTL PRE-TEST,RIGHT:										
500 HZ		6		14						
1000 HZ		3		0						
2000 HZ		-4		-6						
3000 HZ		-3		-4						
4000 HZ		-2		3						
6000 HZ		-1		-4						
HTL POST(2),LEFT:										
3000 HZ		4		1						
4000 HZ		-1		4						
HTL POST(2),RIGHT:										
3000 HZ		3		-4						
4000 HZ		-4		-5						
HTL POST(30),LEFT:										
500 HZ		7		6						
1000 HZ		-8		0						
2000 HZ		-4		-3						
3000 HZ		-6		-2						
4000 HZ		-2		-2						
6000 HZ		5		8						
HTL POST(30),RIGHT:										
500 HZ		10		11						
1000 HZ		-3		1						
2000 HZ		-7		-3						
3000 HZ		-7		1						
4000 HZ		-4		9						
6000 HZ		-5		-3						

SUBJECT 83 MALE 19 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					-2	-4	-6	2	-4	10
1000 HZ					-3	-6	-7	1	-4	10
2000 HZ					-3	-6	-5	-4	-4	8
3000 HZ					-4	-9	-10	-5	-5	0
4000 HZ					-5	-9	-10	-4	-8	1
6000 HZ					-5	-6	-3	18	5	11
HTL PRE-TEST,LEFT:										
500 HZ					14	-5	-2	0	-2	1
1000 HZ					-3	-5	-8	3	-7	3
2000 HZ					-5	-9	-9	-7	-9	0
3000 HZ					-5	-8	-8	-6	-9	-1
4000 HZ					-7	-9	-9	-9	-9	-1
6000 HZ					2	-1	5	9	-2	12
HTL PRE-TEST,RIGHT:										
500 HZ					-3	-5	-3	-1	-4	9
1000 HZ					-3	-5	-5	1	-5	10
2000 HZ					-3	-5	-3	-5	-2	6
3000 HZ					-4	-9	-9	-6	-9	-1
4000 HZ					-5	-10	-9	-6	-9	3
6000 HZ					5	4	-1	9	4	13
HTL POST(2),LEFT:										
3000 HZ					-5	-5	-5	2	-2	11
4000 HZ					-7	-7	-7	-5	-6	11
HTL POST(2),RIGHT:										
3000 HZ					-8	-8	-6	3	-1	15
4000 HZ					-4	-9	-7	7	2	23
HTL POST(30),LEFT:										
500 HZ					-1	4	3	2	5	19
1000 HZ					-3	-4	-4	-3	1	14
2000 HZ					-5	-7	-6	-6	-1	14
3000 HZ					-7	-8	-4	-10	1	13
4000 HZ					-9	-7	-7	-10	-1	10
6000 HZ					6	2	6	4	9	12
HTL POST(30),RIGHT:										
500 HZ					-2	-6	-4	-10	9	18
1000 HZ					-4	-8	-8	-2	11	24
2000 HZ					-5	-8	-7	-2	5	25
3000 HZ					-5	-8	-9	-2	3	22
4000 HZ					-6	-8	-9	-4	12	24
6000 HZ					5	-10	19	19	14	26

SUBJECT 84 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		0		6						
1000 HZ		2		8						
2000 HZ		5		7						
3000 HZ		3		4						
4000 HZ		0		-2						
6000 HZ		2		6						
HTL PRE-TEST,LEFT:										
500 HZ		1		6						
1000 HZ		-5		4						
2000 HZ		-4		1						
3000 HZ		-6		-2						
4000 HZ		-4		-2						
6000 HZ		6		0						
HTL PRE-TEST,RIGHT:										
500 HZ		-5		6						
1000 HZ		0		6						
2000 HZ		4		4						
3000 HZ		0		-4						
4000 HZ		0		-1						
6000 HZ		2		6						
HTL POST(2),LEFT:										
3000 HZ		-3		10						
4000 HZ		-5		12						
HTL POST(2),RIGHT:										
3000 HZ		1		1						
4000 HZ		-2		1						
HTL POST(30),LEFT:										
500 HZ		1		9						
1000 HZ		-4		1						
2000 HZ		-8		2						
3000 HZ		-9		-2						
4000 HZ		-7		0						
6000 HZ		11		11						
HTL POST(30),RIGHT:										
500 HZ		0		4						
1000 HZ		1		6						
2000 HZ		1		2						
3000 HZ		-1		6						
4000 HZ		-3		-1						
6000 HZ		5		-1						

SUBJECT 85 MALE 23 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	-1	-2	-3	-3						
1000 HZ	-3	-1	-2	-1						
2000 HZ	-2	-4	-3	-4						
3000 HZ	-2	0	-3	-4						
4000 HZ	-1	-2	-4	-1						
6000 HZ	0	3	9	2						
HTL PRE-TEST,LEFT:										
500 HZ	-5	2	-2	10						
1000 HZ	-3	-5	-4	-5						
2000 HZ	-1	-4	-4	-1						
3000 HZ	-2	-4	-3	-4						
4000 HZ	4	-2	2	-3						
6000 HZ	5	-1	-4	11						
HTL PRE-TEST,RIGHT:										
500 HZ	-1	-2	-2	2						
1000 HZ	-3	-1	-1	-1						
2000 HZ	-2	-4	-3	-3						
3000 HZ	-2	-1	-3	-1						
4000 HZ	0	-2	-5	-2						
6000 HZ	0	1	5	5						
HTL POST(2),LEFT:										
3000 HZ	1	-3	0	-3						
4000 HZ	8	1	2	5						
HTL POST(2),RIGHT:										
3000 HZ	-1	-1	2	2						
4000 HZ	1	0	4	3						
HTL POST(30),LEFT:										
500 HZ	-4	1	-2	-4						
1000 HZ	-4	-4	-3	-6						
2000 HZ	-2	-3	-1	-2						
3000 HZ	-3	-3	-1	-6						
4000 HZ	4	6	-2	-1						
6000 HZ	6	8	9	11						
HTL POST(30),RIGHT:										
500 HZ	-3	-1	-4	-1						
1000 HZ	-2	-1	-3	0						
2000 HZ	3	-5	-1	-3						
3000 HZ	-1	-2	-2	-4						
4000 HZ	0	-3	1	-4						
6000 HZ	3	0	6	8						

SUBJECT 86 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	9		8							
1000 HZ	6		8							
2000 HZ	9		7							
3000 HZ	9		6							
4000 HZ	9		7							
6000 HZ	-4		1							
HTL PRE-TEST,LEFT:										
500 HZ	11		11							
1000 HZ	11		11							
2000 HZ	14		11							
3000 HZ	7		7							
4000 HZ	6		5							
6000 HZ	-2		2							
HTL PRE-TEST,RIGHT:										
500 HZ	8		9							
1000 HZ	3		7							
2000 HZ	10		5							
3000 HZ	8		4							
4000 HZ	11		2							
6000 HZ	-3		-2							
HTL POST(2),LEFT:										
3000 HZ	11		11							
4000 HZ	6		7							
HTL POST(2),RIGHT:										
3000 HZ	9		10							
4000 HZ	11		9							
HTL POST(30),LEFT:										
500 HZ	10		10							
1000 HZ	10		7							
2000 HZ	12		10							
3000 HZ	9		6							
4000 HZ	6		4							
6000 HZ	-5		-6							
HTL POST(30),RIGHT:										
500 HZ	8		1							
1000 HZ	4		2							
2000 HZ	3		5							
3000 HZ	4		10							
4000 HZ	10		8							
6000 HZ	-2		1							

SUBJECT 87 MALE 20 YEARS OF AGE

INTENSITY(DBA) DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 10	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ		-3		12	5	-2	10	9	3	5
1000 HZ		-3		-4	-2	-6	7	3	-4	1
2000 HZ		7		-4	0	6	-2	12	-4	8
3000 HZ		1		-6	0	-1	-5	-3	-5	-3
4000 HZ		1		-2	-4	-7	-1	7	-2	-3
6000 HZ		-7		-8	2	-7	-1	11	0	5
HTL PRE-TEST,LEFT:										
500 HZ		5		11	9	2	17	18	-1	6
1000 HZ		0		4	4	-2	5	15	2	3
2000 HZ		0		0	7	-5	12	5	2	3
3000 HZ		-5		-6	9	-1	4	6	6	6
4000 HZ		-6		6	4	-4	1	8	5	9
6000 HZ		-5		10	6	-3	4	15	19	6
HTL PRE-TEST,RIGHT:										
500 HZ		6		7	7	4	14	10	10	8
1000 HZ		-1		1	0	2	9	2	-3	2
2000 HZ		5		2	10	7	12	10	5	7
3000 HZ		-3		-2	2	-1	-5	-3	-5	-4
4000 HZ		5		-2	3	-5	3	10	-2	0
6000 HZ		-8		-2	0	-4	-2	16	4	11
HTL POST(2),LEFT:										
3000 HZ		8		16	10	2	14	12	15	8
4000 HZ		10		14	8	-2	19	8	12	12
HTL POST(2),RIGHT:										
3000 HZ		0		1	2	1	0	5	-5	-3
4000 HZ		-8		3	14	-4	7	8	2	6
HTL POST(30),LEFT:										
500 HZ		4		15	16	-2	17	3	5	4
1000 HZ		5		9	1	-5	8	5	1	0
2000 HZ		4		0	2	-4	7	-1	0	7
3000 HZ		2		5	5	-6	8	5	2	8
4000 HZ		6		6	5	-2	13	10	6	12
6000 HZ		14		4	1	-4	1	12	4	2
HTL POST(30),RIGHT:										
500 HZ		2		13	4	1	2	8	7	-1
1000 HZ		-1		-2	2	-6	1	-5	2	-1
2000 HZ		8		-4	4	-2	6	5	8	5
3000 HZ		-7		-1	0	1	-3	-6	-2	-3
4000 HZ		-4		2	-2	-7	1	-2	1	0
6000 HZ		-4		-2	3	-6	3	-2	2	4

SUBJECT 88 FEMALE 21 YEARS OF AGE

INTENSITY(DBA) / DURATION(SEC)	92/ 40	92/ 160	92/ 1000	115/ 160	120/ 16	120/ 40	125/ 1	125/ 10	130/ 1	130/ 10
HTL PRACTICE,RIGHT:										
500 HZ					10	11	18	3	5	8
1000 HZ					2	2	2	-3	-4	-1
2000 HZ					3	1	3	-4	-5	-4
3000 HZ					-2	0	-2	-4	-4	-4
4000 HZ					6	4	-1	0	-4	-4
6000 HZ					5	0	5	-3	0	-4
HTL PRE-TEST,LEFT:										
500 HZ					11	12	12	-1	-4	1
1000 HZ					2	6	5	-1	-3	1
2000 HZ					2	2	4	-3	-5	-5
3000 HZ					-7	-6	-6	-8	-8	-8
4000 HZ					9	8	3	0	-3	5
6000 HZ					3	8	8	6	8	5
HTL PRE-TEST,RIGHT:										
500 HZ					5	10	10	1	-1	2
1000 HZ					2	1	1	-4	-4	0
2000 HZ					0	2	1	-3	-5	-1
3000 HZ					-2	0	-2	-5	-5	-4
4000 HZ					6	2	-1	0	-4	-4
6000 HZ					5	-1	3	-3	2	1
HTL POST(2),LEFT:										
3000 HZ					-7	0	-7	-6	-7	-4
4000 HZ					-10	8	5	6	-1	5
HTL POST(2),RIGHT:										
3000 HZ					-2	1	1	0	-1	2
4000 HZ					4	5	1	1	-1	-2
HTL POST(30),LEFT:										
500 HZ					7	7	7	2	1	1
1000 HZ					3	5	7	-4	0	-1
2000 HZ					2	0	-1	-5	-6	-3
3000 HZ					-7	-6	-7	-8	-8	-9
4000 HZ					7	6	10	1	2	5
6000 HZ					9	8	8	10	12	7
HTL POST(30),RIGHT:										
500 HZ					10	13	8	-1	1	3
1000 HZ					3	6	2	-4	-1	-1
2000 HZ					2	-3	-1	-3	-2	-3
3000 HZ					-2	0	1	-6	-2	-1
4000 HZ					8	2	-1	-5	-2	-2
6000 HZ					-2	0	4	1	3	4

SUBJECT 89 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		1		0						
1000 HZ		3		4						
2000 HZ		4		2						
3000 HZ		5		3						
4000 HZ		1		3						
6000 HZ		3		-5						
HTL PRE-TEST,LEFT:										
500 HZ		5		7						
1000 HZ		9		9						
2000 HZ		9		8						
3000 HZ		-1		-1						
4000 HZ		5		3						
6000 HZ		10		6						
HTL PRE-TEST,RIGHT:										
500 HZ		6		3						
1000 HZ		6		4						
2000 HZ		3		2						
3000 HZ		4		3						
4000 HZ		4		3						
6000 HZ		1		-2						
HTL POST(2),LEFT:										
3000 HZ		5		3						
4000 HZ		21		4						
HTL POST(2),RIGHT:										
3000 HZ		13		5						
4000 HZ		15		5						
HTL POST(30),LEFT:										
500 HZ		7		16						
1000 HZ		10		9						
2000 HZ		8		8						
3000 HZ		2		2						
4000 HZ		9		6						
6000 HZ		16		9						
HTL POST(30),RIGHT:										
500 HZ		6		5						
1000 HZ		7		5						
2000 HZ		5		3						
3000 HZ		11		4						
4000 HZ		9		3						
6000 HZ		5		1						

SUBJECT 90 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	150	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ		-3		-4						
1000 HZ		-3		-5						
2000 HZ		-3		-6						
3000 HZ		-2		-1						
4000 HZ		-5		1						
6000 HZ		-2		6						
HTL PRE-TEST,LEFT:										
500 HZ		-5		-6						
1000 HZ		-5		-6						
2000 HZ		-3		-5						
3000 HZ		-2		-4						
4000 HZ		3		4						
6000 HZ		-2		-3						
HTL PRE-TEST,RIGHT:										
500 HZ		-3		-4						
1000 HZ		-3		-5						
2000 HZ		-7		-6						
3000 HZ		-2		-4						
4000 HZ		3		-2						
6000 HZ		-2		4						
HTL POST(2),LEFT:										
3000 HZ		3		5						
4000 HZ		8		13						
HTL POST(2),RIGHT:										
3000 HZ		2		4						
4000 HZ		7		2						
HTL POST(30),LEFT:										
500 HZ		-2		-2						
1000 HZ		-6		-6						
2000 HZ		-5		-5						
3000 HZ		-6		-6						
4000 HZ		1		1						
6000 HZ		3		3						
HTL POST(30),RIGHT:										
500 HZ		3		3						
1000 HZ		-4		-4						
2000 HZ		-6		-6						
3000 HZ		-6		-6						
4000 HZ		-2		-2						
6000 HZ		1		1						

SUBJECT 91 MALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					1	11	18	5	12	19
1000 HZ					-4	-4	2	1	4	4
2000 HZ					-4	-4	3	2	-1	1
3000 HZ					-3	-4	1	1	-2	2
4000 HZ					-4	-5	2	2	9	7
6000 HZ					0	5	3	3	6	14
HTL PRE-TEST,LEFT:										
500 HZ					-3	1	11	5	13	13
1000 HZ					-4	-4	5	3	6	5
2000 HZ					1	1	4	2	5	4
3000 HZ					-8	-8	-5	-5	-5	0
4000 HZ					-8	-9	-5	-5	-3	0
6000 HZ					3	3	3	1	4	4
HTL PRE-TEST,RIGHT:										
500 HZ					1	-1	12	8	12	17
1000 HZ					-4	-4	2	2	3	3
2000 HZ					-3	0	1	1	-1	2
3000 HZ					-4	-2	-1	-1	-2	4
4000 HZ					-7	-8	1	1	6	3
6000 HZ					0	7	3	3	2	14
HTL POST(2),LEFT:										
3000 HZ					-9	-8	-4	4	-2	-2
4000 HZ					-9	-8	-6	-2	-3	1
HTL POST(2),RIGHT:										
3000 HZ					-4	-2	-2	0	2	3
4000 HZ					-5	-5	-2	1	14	4
HTL POST(30),LEFT:										
500 HZ					-1	4	8	5	12	10
1000 HZ					-2	-2	4	3	3	1
2000 HZ					-2	-2	7	2	7	2
3000 HZ					-9	-9	-5	-5	-4	-6
4000 HZ					-9	-9	-2	-5	-3	-3
6000 HZ					6	5	3	1	4	5
HTL POST(30),RIGHT:										
500 HZ					-4	-3	4	8	12	4
1000 HZ					-6	-4	-4	2	2	0
2000 HZ					-8	-6	-2	1	0	1
3000 HZ					-4	-4	-2	-1	0	0
4000 HZ					-4	-2	2	1	5	3
6000 HZ					5	-1	11	3	4	-3

SUBJECT 92 MALE 18 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	6		3							
1000 HZ	0		1							
2000 HZ	-4		-4							
3000 HZ	1		8							
4000 HZ	-1		-5							
6000 HZ	5		-4							
HTL PRE-TEST,LEFT:										
500 HZ	5		5							
1000 HZ	-1		2							
2000 HZ	8		9							
3000 HZ	4		3							
4000 HZ	3		4							
6000 HZ	0		-6							
HTL PRE-TEST,RIGHT:										
500 HZ	6		11							
1000 HZ	1		-1							
2000 HZ	-2		0							
3000 HZ	5		9							
4000 HZ	-1		-5							
6000 HZ	5		-2							
HTL POST(2),LEFT:										
3000 HZ	-6		3							
4000 HZ	-9		0							
HTL POST(2),RIGHT:										
3000 HZ	11		10							
4000 HZ	-5		-4							
HTL POST(30),LEFT:										
500 HZ	1		-1							
1000 HZ	-2		-7							
2000 HZ	5		5							
3000 HZ	0		3							
4000 HZ	-1		1							
6000 HZ	0		-3							
HTL POST(30),RIGHT:										
500 HZ	-1		1							
1000 HZ	1		-6							
2000 HZ	-5		-4							
3000 HZ	5		9							
4000 HZ	-2		-4							
6000 HZ	2		-4							

SUBJECT 93 MALE 20 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ					10	13	3	3	-4	12
1000 HZ					-3	-9	-2	-7	-9	11
2000 HZ					-7	-9	-5	-9	-10	12
3000 HZ					-4	-6	8	-9	-10	8
4000 HZ					-5	-8	-9	-8	-8	16
6000 HZ					5	2	-1	7	6	25
HTL PRE-TEST,LEFT:										
500 HZ					4	1	0	7	7	19
1000 HZ					-4	-8	-8	-1	-3	7
2000 HZ					-4	-4	-8	-9	-10	2
3000 HZ					2	1	-2	9	2	17
4000 HZ					2	-3	0	3	0	18
6000 HZ					5	8	0	10	12	22
HTL PRE-TEST,RIGHT:										
500 HZ					6	4	-3	3	4	17
1000 HZ					3	-1	-3	0	-5	11
2000 HZ					-4	-3	-9	-1	-7	4
3000 HZ					-5	-2	-9	-7	-7	9
4000 HZ					-5	-2	-7	-7	-1	6
6000 HZ					4	1	6	6	8	16
HTL POST(2),LEFT:										
3000 HZ					6	9	-3	7	9	16
4000 HZ					3	2	-4	0	3	21
HTL POST(2),RIGHT:										
3000 HZ					-5	-2	-7	-9	-4	8
4000 HZ					0	-1	-8	-3	-6	10
HTL POST(30),LEFT:										
500 HZ					4	-4	3	2	1	18
1000 HZ					-6	-7	-9	-6	-8	9
2000 HZ					-5	-6	-9	-8	-8	6
3000 HZ					6	7	-3	6	3	16
4000 HZ					4	5	6	1	1	23
6000 HZ					5	8	5	6	10	23
HTL POST(30),RIGHT:										
500 HZ					4	-2	5	-1	-1	15
1000 HZ					-2	-4	-2	-5	-6	9
2000 HZ					-6	-8	-3	-7	-9	3
3000 HZ					-7	-4	-6	-8	-9	8
4000 HZ					-5	-2	-4	-3	-5	9
6000 HZ					-4	2	12	3	15	22

SUBJECT 94 FEMALE 21 YEARS OF AGE

INTENSITY(DBA)	92/	92/	92/	115/	120/	120/	125/	125/	130/	130/
DURATION(SEC)	40	160	1000	160	10	40	1	10	1	10
HTL PRACTICE,RIGHT:										
500 HZ	5	4	8	7						
1000 HZ	5	3	6	3						
2000 HZ	-5	1	5	-2						
3000 HZ	-2	-7	2	0						
4000 HZ	-8	-8	-8	-6						
6000 HZ	6	-1	-6	-6						
HTL PRE-TEST,LEFT:										
500 HZ	9	8	7	9						
1000 HZ	5	11	11	7						
2000 HZ	4	4	5	3						
3000 HZ	4	2	3	-2						
4000 HZ	8	10	13	6						
6000 HZ	2	7	2	7						
HTL PRE-TEST,RIGHT:										
500 HZ	5	7	5	9						
1000 HZ	2	3	-1	2						
2000 HZ	-4	1	4	1						
3000 HZ	-4	0	1	0						
4000 HZ	-9	-8	-8	-5						
6000 HZ	-3	1	-1	1						
HTL POST(2),LEFT:										
3000 HZ	-1	5	7	15						
4000 HZ	13	11	10	28						
HTL POST(2),RIGHT:										
3000 HZ	4	1	4	9						
4000 HZ	-3	-7	-3	0						
HTL POST(30),LEFT:										
500 HZ	6	9	12	10						
1000 HZ	3	6	6	8						
2000 HZ	2	1	1	0						
3000 HZ	4	0	4	3						
4000 HZ	8	13	7	14						
6000 HZ	9	9	18	23						
HTL POST(30),RIGHT:										
500 HZ	3	3	9	4						
1000 HZ	1	1	4	1						
2000 HZ	-3	-2	3	-3						
3000 HZ	-1	-3	0	-3						
4000 HZ	-8	-8	-6	-7						
6000 HZ	0	-7	8	-1						